California's Computer Magazine

FEB. 1987 ISSUE 28

FREE

MicroTimes™

UNIX IN A DOS WORLD

THE SANTA CRUZ OPERATION

RELATIONAL DATABASE FOR UNIX: INFORMIX-SQL

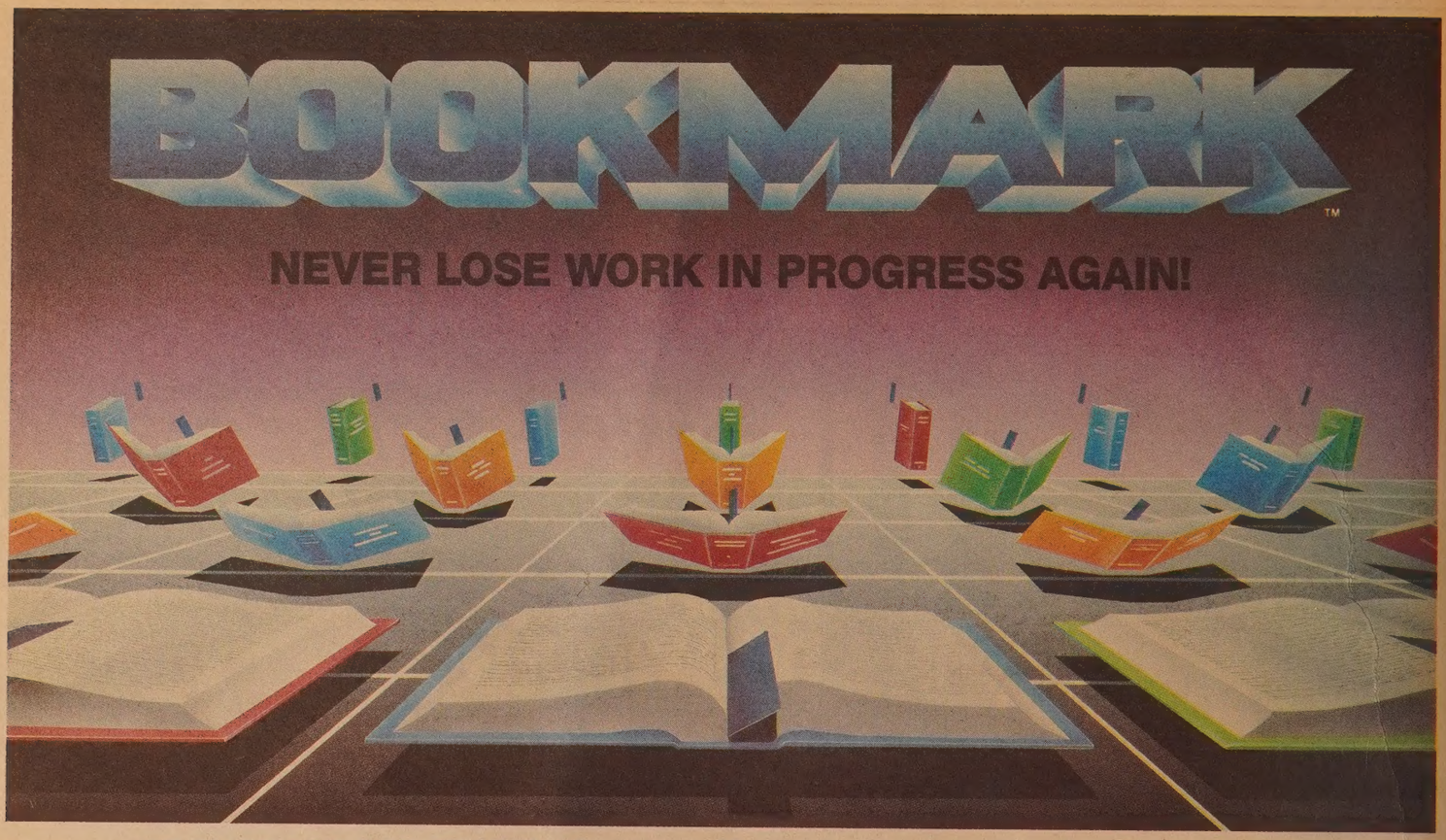
JAN LEWIS: TIME FOR UNIX?

ALSO:

FAX MEETS PC

KEN MILBURN INTRODUCES THE 80386 COMPUTERS

DOUG (L) AND LARRY MICHELS OF THE SANTA CRUZ OPERATION



BOOKMARK™ Data Protection Software

Automatically marks your place so you can resume where you left off.

Runs with most software so if you decide to call it a day you can power down, and upon restart BOOKMARK will bring you back where you left off...it's like having a BOOKMARK in your computer!

Stop wasting time navigating through menus . . . or teaching novices.

Easy to use. You choose how often work is saved, by number of keystrokes or length of time.

Work in progress can be resumed within seconds after system crash, power failure, accidental reset or power down.

Costly battery backup systems are no longer needed when work in progress is already saved to the point of the previous BOOKMARK placement.

BOOKMARK is a memory-resident utility that automatically and periodically saves work in progress to a reserved area of the hard disk.

Retail Price **$69.95**

Price Subject to Change

Requirements:
IBM PC/XT/AT or 100% Compatible
64k to 640k
IBM DOS 2.1 or Higher
1 Floppy Disk Drive • Hard Disk Drive (10 Megabytes Minimum) • Video Display Adapter IBM (Monochrome, Color, Enhanced Color), Hercules, AST
(BOOKMARK occupies an equivalent space on hard disk as in system RAM plus video RAM)

To Order, Call INTELLISOFT International or Ask Your Dealer for BOOKMARK

INTELLISOFT™

INTERNATIONAL

Call Toll Free (800) 544-MARK • In California Call Toll Free (800) 543-MARK
70 Digital Drive • P.O. Box 1972 • Novato, California 94948 • (415) 883-1188

BOOKMARK™ is a trademark of INTELLISOFT International. Copyright © 1986 by INTELLISOFT International. All rights reserved. Patent Pending.
IBM PC/XT/AT are registered trademarks of International Business Machines Corporation. Hercules is a trademark of Hercules Computer Technology.
AST is a registered trademark of AST Research, Inc.

Increase Your Computing Power By 60% For Only $89.95

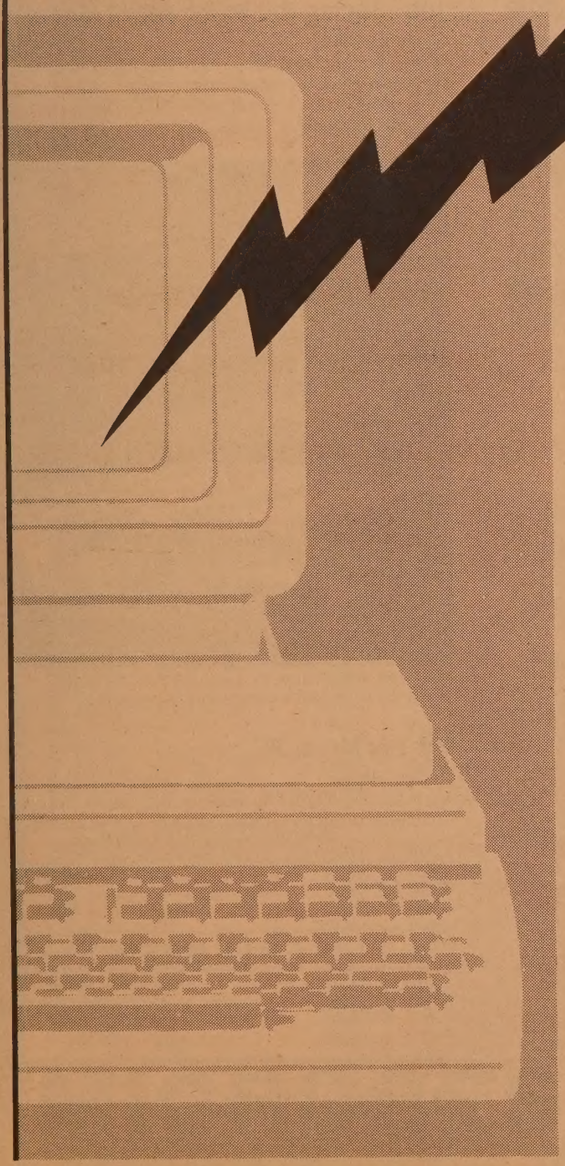
TurboKwik adds new life to your 8088-based computer. Easily installed, ***TurboKwik*** speeds up your processing power.

At the flick of a switch, ***TurboKwik*** lets your computer run fast, faster, and even faster with 6.4 Mhz, 6.7 Mhz, and 7.4 Mhz operating speeds. No more "hurry up and wait" while your computer processes information.

And, ***Turbokwik does not require an expansion slot,*** so you still have all of your upgrade options open.

Best of all, at only $89.95, you'll save hundreds of dollars with ***TurboKwik.***

. . . TurboKwik



TurboKwik Compare Price and Performance

Company	Product	System	Slot	Speed (Mhz)	Price
TurboKwik	***TurboKwik***	***PC/XT***	***NO***	***6.1/6.7/7.4***	***$89.95***
AST Research	Flash Pak	PC/XT	YES	9.54 Mhz	495.00
Microsoft	Mach 10	PC/XT	YES	9.7	595.00
Orchid	Turbo 186	PC/XT	YES	8	595.00
Maynard	Surprise	PC/XT	NO	9.54	249.00
Microspeed	Fast 88	PC/XT	NO	6.1/6.7/7.4	149.00

CALL NOW

415/692-3102

Or Contact Our Service Representative In Your Area:

James Le
Computer Sales & Services/Santa Ana
(714) 836-5534

Dan Thacker
TAD Electronics/Lancaster
(805) 949-6056

Volume Pricing And Dealer Inquiries Welcome

TurboKwik Inc.

819 Mitten Road, Suite 15
Burlingame, CA 94010
415/692-3102

Add $3.50 for shipping and handling.
CA residents add 6.5% Sales Tax

FEB. 1987 ISSUE 28
MICROTIMES

COVER STORY

COVER AND CONTENTS PHOTOS: MARC FRANKLIN

38 The Santa Cruz Operation: Taking Care Of Business With XENIX

By Bennett Falk and Mary Eisenhart

With the advent of the 80386-based micros and other personal computers powerful enough to handle true multi-user, multi-tasking applications, the UNIX operating system is coming into its own in the business world. The Santa Cruz Operation markets XENIX, Microsoft's licensed value-added version of UNIX, and has developed XENIX work-alikes for the most popular DOS-based applications. In this month's cover story, SCO founders Larry and Doug Michels explain the company's strategy for providing business solutions — which may be based on DOS, XENIX, or a combination thereof.

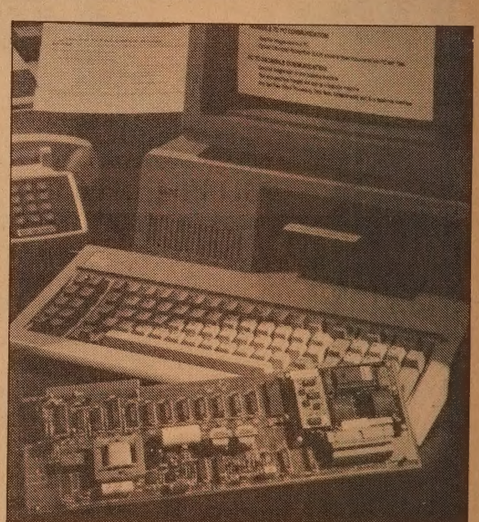
FEATURES

The 386-based Multitech 1100.

56 The Third Generation PC: Introducing the 80386-Based Micros

By Ken Milburn

A report from COMDEX on available machines based on the Intel 32-bit 80386 microprocessor — and peripheral, firmware and software products to help you put that power to use.



Electronic Information Technology's PC-FAX board transmits information quickly and inexpensively.

69 Fax Meets PC

By Julie Weiss

Look out, Zap Mail. The next revolution in business communications may well come from the humble facsimile machine, as standalone units acquire sophisticated capabilities and PCs are able to emulate fax machines.

DEPARTMENTS

8 Letters

12 Calendar Of Events

14 But Jan Lewis Says...
UNIX is a serious contender in the business world as the only currently available operating system that effectively uses the power of the new 32-bit micros — but is the business world ready for **!chmod go + wx/uh/31/maddog/unixvs*.compars.readme**?

18 Industry News
By Hartley and Patricia Lesser

76 Buyers Guide

84 Reviews

88 Business Products

100 User Group Network

112 Classifieds

98 Index Of Advertisers

COLUMNS

72 UNIX
By Bennett Falk
Informix-SQL, a powerful relational database manager.

114 Softstrip Solutions
By Wayne A. Yacco
Creating temporary backup files — and getting rid of them when you don't need them.

IBM XT from $1599

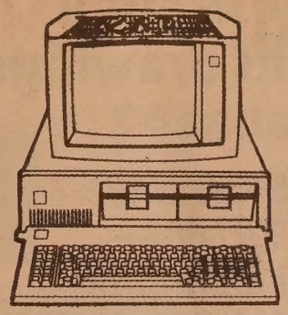
COMPAQ PORTABLES from $1599

IBM AT from $2399

COMPAQ DESKTOPS from $1599

OKIDATA
192 PLUS $349
193 PLUS 499

HAYES
1200B w/sw $319
1200 Ext 349



TOSHIBA T1100+ BEST Price

TOSHIBA T3100 BEST Price

NEC MULTISYNC
Monitor $559

XT COMPATIBLE BEST Price

AT COMPATIBLE BEST Price

PRENTICE POPCOM X100
1200 Bd Ext ... $199

SEAGATE HARD DRIVES with controller & cables
20 MB $349
30 MB 449

TAPE BACKUP
20 MB Int $549
60 MB Int $749

MOUNTAIN
Drivecard 20 ..... $549
Drivecard 30 599

SYSTEMS
Custom Configurations
Burn-in & Testing
Lease or Purchase

VIDEO-7
Vega $299
Vega Delux 359

SONY MULTISCAN
Monitor $559

Canon PERSONAL COPIERS
PC-3 ..... $599
PC-5 699
PC-20 799
PC-25 899

PRINTERS

ALPS ALQ 218 ..... $499
ALQ 224 599
ALQ 314 749
ALQ 324 799
BROTHER HR-10 Portable 299
HR-20 Daisy Wheel 449
M-1409 Dot Matrix 429
M-1509 Dot Matrix 499
M-1709 Dot Matrix 599
Twinriter 5 Dot/Daisy 999
CANON Bubble Jet BJ-80 399
Ink Jet Color PJ-1080 499
CITIZEN MSP 10 259
MSP 15 369
MSP 20 309
MSP 25 469
DICONIX 150 349
EPSON FX-85 349
FX-286 469
EX-800 459
EX-1000 649
LQ-800 499
LQ-1000 689
LQ-2500 999
IBM Pro Printer 399
Pro Printer XL 599
Quite Writer II 1299
JUKI 6100 Par 419
6300 Par 739
5510 Color 429
NEC P660 449
P760 619
P560 999
3550Spinwriter 779
Bi-Di Tractor for P6 160
Bi-Di Tractor 3500/8800 210
OKIDATA 192 Plus 349
193 Plus 499
292 E 599
293 E 759
294 1199
Tractors for above 60
Cut Sheet Feeds for above 290
PANASONIC 1092 299
1592 419
KXP3151 379
TOSHIBA 321 449
341 549
New 341 E 799
351 P/S 899
New 351 P/S Model II 1299
351 P/S Color 1399
Bi-Di Tractor 341/351 190
Cut Sheet Feed 341/351 290
KENSINGTON Printer Stand ... 20
With Printer Purchase 10

LASER PRINTERS

CANON Laser LBP8A1 ..... $1999
Laser LBP8A2 2999
CIE Lips 10 w/Starter Kit 2999
H-P Laser Jet Plus 2949
Laser Jet 500 + ... 3999
KYOCERA Laser ..... CALL
OKIDATA Laserline 6 1799
QMS KISS Laser 1949
QUADLASER LS1000 ..... CALL
New Quadlaser-LS1100 ..... SAVE
TOSHIBA PageLaser 12 .... CALL

DRIVES

FUJITSU 360k ½ Ht Floppy ... $89
TEAC 360k ½ Ht Floppy 89
TOSHIBA 360k ½ Ht Floppy ... 89
CORE 20 Mb Int (AT) 1199
30 Mb Int (AT) 1299
40 Mb Int (AT) 1399
72 Mb Int (AT) 2599
IOMEGA Bernoulli 10 + 10 ... 1899
Bernoulli Box 20 1799
Bernoulli Box 20 + 20 2299
Bernoulli Box Plus 3899
MOUNTAIN DriveCard 20 Mb . 549
DriveCard 30 Mb 599
PLUS HardCard 10 Mb 499
Hard Card 20 Mb 649
PRIAM 40 Mb Int (AT) 999
40 Mb Int w/Controller 1199
60 Mb Int (AT) 1299
60 MB Int w/Controller 1499
SEAGATE 10 Mb Int ½ Ht 339
20 Mb Int ½ Ht w/Cont 349
30 Mb Int ½ Ht w/Cont 449
20 Mb Full Ht (AT) 499
30 Mb Full Ht (AT) 599
40 Mb Full Ht (AT) 749
40 Mb Half Ht (AT) 799
80 Mb Full Ht (AT) 1199

BACKUP

CORE 60 Mb Ext $1499
EVEREX 20 Mb Int 599
Excel Stream 60 Mb Int 749
Excel Stream 60 Mb Ext 849
GENOA 20 Mb Int 729
20 Mb Ext 869
45-60 Mb Int 799
45-60 Mb Ext 999
IRWIN 10 Mb Int 449
20 Mb Int 549
SYSGEN Image 20 Mb Int 549
Image 20 Mb Ext 599
TECMAR QIC 60 AT 1199

MULTI-FUNCTION CARDS

AST Sixpack Premium 512k .. $349
Rampage 256 k 299
Rampage AT 512k 449
Rampage / EGA AT 799
INTEL Above Board PC 64k .. 249
Above Board PS 64k 299
Above Board AT 128k 399
Above Board PS/AT 128k 449
ORCHID TinyTurbo 286 429
PCturbo 286E w/1Mb 729
New Jet 386 ..... CALL

CHIPS ETC

64K RAM Set of 9 ..... $10
256K RAM Set of 9 30
8087-3 PC/XT 5 Mhz 105
8087-2 PC/XT 8 Mhz 139
80287-3 AT 6 Mhz 165
80287-8 AT 8 Mhz 259

MONITORS

AMDEK 310A Amber $149
Color 600 399
Color 722 499
Color 730 599
HITACHI 1216 449
1455 579
3719 w/Controller 2999
4615 w/Controller 3999
4619 w/Controller 4999
IBM Color 549
Enhanced Color Display 699
MDS Genius VHR Full Pg Display w/Controller ..... CALL
MITSUBISHI XC-1409 349
XC-1410 499
XC-1430 539
New FHF Series ..... CALL
NEC Multisync 559
PGS MAX-12 159
HX-12 399
HX-12E 469
SR-12 559
SR-12P 699
SONY TV/Monitor 1311CR 399
Multiscan 1302 559
TAXAN 121G / 122A 149
Color 620 399
Color 630 449
Color 640 519
Color 650 599
Color 760 - 14" 549
THOMPSON Color 299

MODEMS

ANCHOR Express 1200 Ext .. $199
Lightening 2400 Int w/soft 299
Lightening 2400 Ext 309
EVEREX 1200B w/software ... 109
NEW 2400B w/software ..... CALL
HAYES 1200B w/smartcom II . 319
1200 Ext 349
2400B w/smartcomII 549
2400 Ext 569
Smartcom II 99
OKIDATA Okitel 1200 Ext 299
PRENTICE POPCOM 1200 Int 249
POPCOM 1200 Ext 199
POPCOM Int w/PFS:Access .. 299
POPCOM Ext w/PFS:Access .. 299
PRACTICAL PERIPH 1200 Int . 129
1200 Ext 149
Multifunction 1200 249
PROMETHEUS 1200B w/soft . 209
Promodem 1200 Ext 269
Promodem 2400 Ext 369
TOSHIBA 1200B for T1100 + .. 299
VENTEL 1200 Plus Ext 339
1200 ½ Card w/Crosstalk 339
2400 ½ Card w/Crosstalk 439
2400 Plus Ext 439
US ROBOTICS Courier 1200 .. 199
Courier 2400 399
Microlink 1200 Int 249
Microlink 2400 Int 399

DISPLAY CARDS

ATI EGA Wonder $299
EVEREX The Edge 249
GENOA Spectrum ½ Card 199
Spectrum Plus 269
Spectrum EGA 349
HERCULES Color 159
Graphics Card 199
Graphics Card Plus 199
NEC Multisync GB-1 ..... CALL
NSI LOGIC EPIC EGA 229
EPIC EGA ½ Card 249
SMART EGA 279
ORCHID EGA 269
TurboEGA 569
TurboPGA 999
PARADISE AutoSwitch EGA .. 359
QUADRAM QuadEGA+ 349
Quad EGA ProSync 399
SIGMA EGA 349
Turbo EGA 599
SIGMA 400: Hi, Low or Med .. 429
Turbo 400 599
STB Chauffer 219
EGA Plus 299
VIDEO-7 Vega 299
Vega Delux 359
ZUCKERBOARD Color 109
Zuckerboard Monographics ... 149

POWER

COMPUTER ACCESSORIES P2 $89
P15 Power Director 99
CURTIS Command Center 79
DATASHIELD 125 Power Center 89
150 Power Center 119
300 Watts Backup 349
350 Turbo Backup 429
500 Watts Backup 549
800 Watts Backup 599
KENSINGTON Masterpiece 89
Masterpiece Plus 119
NEW Masterpiece Remote 149
NETWORX Power Mouse 119
MICROCOMPUTERACCESSORIES
Static Clear w/LCD Display 20
Surge Protector Power Strip ... 35
MicroConsole 169
MINUTEMAN 250 Watts Backup 299
300 Watts Backup 469
500 Watts Backup 599
1000 Watts Backup 1199

KEYBOARD/MOUSE

IBM PC Original Keyboard ... $149
KEYTRONIC 5151 Deluxe 159
5153 w/Touch Pad 259
Keyboard Extension Cable 10
IMSI Optimouse 99
MICROSOFT Mouse (Bus) 109
Serial Version 119
MOUSE SYSTEMS PC Mouse . 129
New Bus Plus Model ..... CALL

LOCAL CONSULTANTS
Use our showroom for demo or consultation with your clients. Call to make arrangements.

POLICY: Min order $100. Prices & availability subject to change. Shipping charges vary. Prices reflect discount for advance payment. Personal/company checks take 3 weeks to clear. Add 5% for COD or Credit Cards. COD requires cash or cashier check. Showroom prices may vary. Call for open acct PO's requirements & special prices. All sales final. Refused shipments subject to 20% charge (Min $50). Not responsible for compatibility.
FOR ADVANCE PAYMENT OR PICKUP, PLEASE CALL FIRST FOR WORKORDER #.

AMEX DISCOVER MC VISA

MICROBEST 714-897-2100

12605 HOOVER STREET, GARDEN GROVE, CA 92641 **PLEASE REFER TO AD #MTS 786**

AutoCAD users. . . . Want a LOW-COST way to add drawings to your CAD database?

CAD to CAE Automation

USE SYNTHESIS AND SAVE OVER 90% OVER OTHER DIGITIZING AND SCANNING METHODS. . . CALL FOR DEMO

CAD/CAM/CAE COMPUTER SYSTEMS

- COMPUTERS
- DIGITIZERS
- PLOTTERS
- PRINTERS
- SOFTWARE
- MONITORS
- COMPONENTS
- PERIPHERALS

SALES/SERVICE/TECHNICAL SUPPORT

CALL FOR COMPLETE LINE AND LOWEST PRICES!

"WE WANT YOUR BUSINESS AND HAVE PRICES TO GET IT"

NEW!

Version 2.52
UNPROTECTED
NEW FEATURES
RETAIL $2750

AUTOCAD

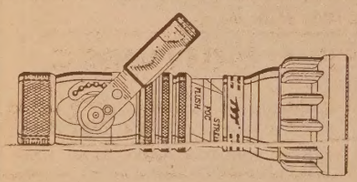
AUTO CAD TRAINING
- *Fundamentals*
- *Advanced Techniques*
- *AutoLISP Programming*

RATES AS LOW AS $150 PER 8 HOUR SEMINAR
CALL FOR SCHEDULE

SPECIAL! ONLY $2300 *(LIMITED QUANTITY)*

NOW OFFERING

- ALL APPLICATION PROGRAMS THAT WORK WITH AutoCAD.
- COMPLETE PAPER DRAWING REPLICATION INTO FINISHED AutoCAD FILES.



RAM
ENGINEERING SERVICES, INC.
2095 E. 27TH STREET, LONG BEACH, CA 90806
CALL (213) 427-9884

RENT

(213)
651-2011
(714)
751-4242

Macintosh Computers
Laserwriter Printers
Desktop Publishing Systems

Rent-a-Mac INC

MICROTIMES

B.P.A. Membership (Consumer Audit Division) applied for April 1986.

PUBLISHER/EDITOR Dennis Erokan

EDITORIAL

MANAGING EDITOR Mary Eisenhart
ASSOCIATE EDITORS Hartley G. Lesser, Patricia J. Lesser
PROOFREADER Pamela Monroe
CONTRIBUTING EDITORS Robert D. Athey, Jr., Bennett Falk, Matthew Leeds, Michael Markowitz, Brock Meeks, Ken Milburn, Doug Pencille, Warren Sirota, Jeff Spurrier
CONTRIBUTING WRITERS Jack Epstein, Ken Fermoyle, Bruce A. Fraser, Paul Hoffman, Helmi Kobler, Woody Liswood, Nancy Mulvany, Seth Novogrodsky, Ron Phillips, Aubrey Pilgrim, Newt Pippin, Steve Rosenthal, Ed Shurtleff, Birrell Walsh, Stephan Wickham, Wayne A. Yacco
CONTRIBUTING PHOTOGRAPHERS Marc Franklin, Ken James, Pat Johnson, Troy Maben, Ann Summa

EDITORIAL CONSULTANTS Don Hamilton, Pat Hamilton

DESIGN

ART DIRECTOR Lee Ann Nelson
ASSISTANT ART DIRECTOR Laura Reese
SENIOR ADVERTISING DESIGNER Mary Angela Collins
ART STAFF Karen Cholodenko, Tim Levin, Lisa Lusk, Susan Whipple, Angela Williams
PRODUCTION COORDINATORS Jody Christy, Doug Boone
CAMERA OPERATORS Angelo Miller, John Moorehead
TYPESETTING Context, Image Factory, The Typesetting Shop, Inc.

ADMINISTRATION

ASSOCIATE PUBLISHER Miles Hurwitz
ACCOUNTING MANAGER Linda Schenk
ACCOUNTING Brian DeLuca, Lesley Hunter, Sara Klotz, Brian Murray
ADMINISTRATIVE ASSISTANTS Linda Fink, Reneé Hendricks

ADVERTISING

ASSOCIATE PUBLISHER Joe Amadeo
ASSISTANT TO THE ASSOCIATE PUBLISHER Carol Priest
ADVERTISING DIRECTOR Chuck Stanley
NATIONAL ACCOUNT DIRECTORS John Lockhart, Bill Reefer
Southern California Sales Manager: Reece A. Franklin
ADVERTISING & PROMOTION David Boyles, Ricky Brandon, Alex Gates, Barry Green, Carolyn Schwartz, Jane Shepherd
ADVERTISING ASSISTANTS Gretchen Sommers (San Francisco), Robbie Wood (Los Angeles)
National Reps.: Carol Oppenheimer

DISTRIBUTION

DISTRIBUTION MANAGER John Erokan
DISTRIBUTION STAFF John Clefstad, Rand Crook, Roe Eyth, Danny Fernandez, Bruce A. Fraser, Frank Grygus, Ron Hershewe, Art Holland, Eliot Kleinberg (asst. L.A.), Kirk Lanier, Joseph Rafalo, Dave Schaffner, Wayne Sibilia, Bill Smith Racks by Free Distribution

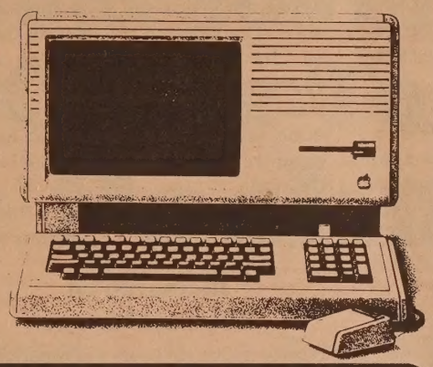
MICROTIMES FOUNDERS Dennis Erokan, Don Hamilton, Pat Hamilton

This Vol. 4. No. 1, February 1987, Whole No. 28 MicroTimes, California's Computer Magazine, is published by BAM Publications, Inc., 5951 Canning St., Oakland, CA 94609. Phone (415) 652-3810. Los Angeles Office, 1800 N. Highland, Suite 220, Hollywood, CA 90028. Phone (213) 467-7878. San Jose Office, 36 Harold Ave., Suite 8, San Jose, CA 95117. Phone (408) 244-4400. Anaheim Office, 800 S. Brookhurst, Suite 1F, Anaheim, CA 92804. Phone (714) 776-2900.

MicroTimes™ is © 1987 by BAM Publications, Inc. Subscriptions rate: 12 issues, $12. All rights reserved. Reproduction in whole or in part without permission of Publisher is strictly prohibited. Unsolicited material is gratefully accepted, but we can't be responsible for returning it unless it is accompanied by a stamped, self-addressed envelope. The staff and management of MicroTimes do not advocate or encourage the use of any product or service advertised herein for illegal purposes.

When You're Ready to Mouse Around...

The Lisa™ Professional



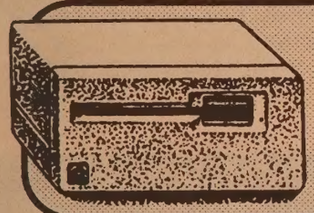
Do it for less with a Lisa

Runs Macintosh Software

The Lisa Professional. You'll find it nowhere else! A powerful computer with up to a full megabyte of RAM, 40Mb internal hard disk capacity, 400K internal disk drive, large 12" screen and keyboard complete with numeric keypad. And, powerful as it is, it's as easy to run as any Macintosh™ and a whole lot easier to afford!

Warranted Reconditioned **$799**

RAM	DRIVE	PRICE	
512K	400K Internal	799.00	
1Mb	400K Internal	995.00	
1Mb	5Mb ProFile	1495.00	
1Mb	10Mb Internal HD	1595.00	
1Mb	20Mb Internal HD	1795.00	
1Mb	10Mb Internal HD	1795.00	*New!*
1Mb	20Mb Internal HD	1995.00	*New!*
Lisa Office System (7/7)		295.00	



Apple® Macintosh™

400K Disk Drives

Original External Drives! **$79** each

Reconditioned - Warranted

SPECIAL PURCHASE

Buy Both Only

MacWrite™/ MacPaint™ $99

Write ver. 2.20 - Paint ver. 1. 3

Comrex® Deluxe Joysticks

NEW IN BOX!

- Works on Apple and Franaklin Atari 2600, 400/800, Vic 20 Commodore 64, Sears Arcade and ColecoVision
- Can be "fine tuned"

$14.95

II Adapter 2.00 additional

Over 200 products for the Apple /// in stock and ready to ship!

Specializing in Remarketed and Obsolete Apple Products...

SUN SYSTEMS REMARKETING

P.O. Box 4059 Logan UT 84321

ORDERLINE -

1-800-821-3221

For a complete lisiting of products CALL FOR OUR LATEST CATALOG

801-752-7631

Questions — Service

VISA MasterCard

Apple and the Apple logo are registered trademarks of Apple Computer Inc. Macintosh is a trademark of Mcintosh Laboratory Inc.

•Apple // •Apple /// •Macintosh™

Hard Disk Drives

Quark® 10mb	$795	II, /// & Mac
Quark 20mb	$895	II, /// & Mac
ProFile™ 5mb	$595	II, /// & XL

ProFiles Reconditioned-Warranted

Apple® Modem

- Hayes Compatible
- 300 Baud - New
- With Apple Acc. Kit

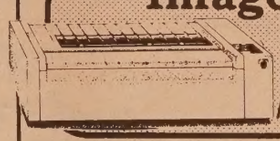
$89

1200 Baud $195 Limited Supply

ORDERLINE -

1-800-821-3221

For a complete lisiting of products CALL FOR OUR LATEST CATALOG



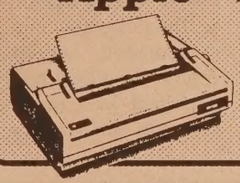
ImageWriter™ Printer

- Dot Matrix
- Serial Printer
- Graphics/Text

$345

Reconditioned-Warranted w/o cable

Apple® Letter Quality Printer



New Low Low Price! **$495**

Reconditioned - Warranted

Apple® IIc

Carry Case

While They Last **$19.95**

Makes a Great Briefcase!

BPI® for the Apple® II & II+

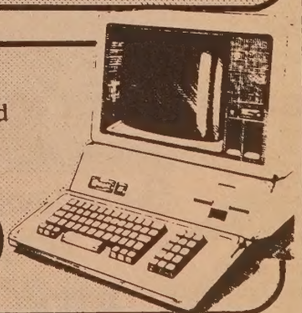
Accounting Software

BPI SYSTEMS™

Sugg. List $495 Per Module **$189**

Apple® ///

- 256K - full-function keybaord
- CPU, Monitor, Disk Drive
- 4 Expansion slots
- Great for accnt/business



Warranted Reconditioned **$599**

With 5mb ProFile $999

Introduce yourself to a fresh new concept called Remarketing. Sun is the nation's largest support center for obsolete Apple® products. For questions service and support call Sun. Each product we sell carries a satisfaction guarantee. We are not satisfied until you are!

FULL SERVICE AND SUPPORT

LETTERS

Reading Ads Helps Business

While reading one of the recent issues of *MicroTimes* I came across an advertisement for DHA *FastPak Mailing System*. I ordered the product and am very happy with the results it has produced for my book publishing company. Using this software package has made my mail order business 100% more effective and profitable. Thanks for the help.

Bob Monaco
President
Swordsman Press
Sherman Oaks

Something For Everybody

Just a quick note to thank you for your assistance in arranging delivery of *MicroTimes* to our building here at Ford Aero. The wide variety of systems covered, as well as the generally interesting nature of the articles, appeals to us greatly. We have the usual boring systems here (like IBM), but there are Amigans, Mac freaks, C64/128 users and even diehard CP/Mers like myself. *MicroTimes* fills a need for us, and the copies that have been available to us in the past are generally snapped up pretty quickly. Thanks again.

Jim Switz
Ford Aerospace
Palo Alto

If you'd like MicroTimes *delivered to your workplace or meeting site, this can probably be arranged if you're in our delivery area. Call our distribution department at (415) 652-3810 to make arrangements. —eds.*

The Professor's Choice

I would like to thank you very much for the exposure you have provided user groups over the years — it has not gone unnoticed.

For over two years I have posted an events calendar on our club board with an encouragement to our members to read *MicroTimes*. In real life I am a full-time college/university computer instructor and have encouraged my students to read *MicroTimes*. We have, many times, discussed articles written in your fine publication. Thanks again and keep up the fine work — you are appreciated!

Richard Hanson
Club 100
Pleasant Hill

Keeping Up With The Locals

I want to personally congratulate you on the editorial content and the advertisements contained in *MicroTimes*. As a Lockheed Data Systems Architect it is necessary for me to keep up with prices, quality, and hints on using a multitude of microcomputer related products. Your publication certainly helps meet this need. The fact that it is free makes it all the more delightful. You are approaching the quality of much more expensive PC related publications, and your information on local vendors and prices is especially welcome.

Thomas B. Roach
Sunnyvale

In Search Of The Lost Mirage

We are trying to locate a company (or its successor) called Mirage Concepts. They used to publish a word processor titled "Express," and were based out of Fresno, we are told. If you or any of your readers can put us in touch with them we would surely appreciate it.

Failing that, we are in need of a rudimentary word processor (IBM) that we may incorporate into an application we've developed. Again, if you or any of your readers . . .

K. Stephan Larsen
Englewood, Colorado

If you have any light to shed on this matter, please write or call Mr. Larsen at Larsen Cotton Inc., 7445 E. Peakview Ave., Englewood, CO 80111, (303) 220-9050. Thanks. —eds.

Another Recruit

After reading much about PCs and their rapid development through the traditional publications and columns from daily newspapers, I thought I had enough bytes in my memory to get my system. I tinkered with it and after a month was able to produce my first document as an apprentice desktop publisher. Smugly I thought, I'm computer literate.

Then yesterday I noticed *MicroTimes*. I picked one up and was amazed at how much I have been missing by way of compuinfo. I've been reading *Computer Currents, PC World*, and a lot of other high-class sounding and slick looking pubs, but nothing comes close to *MicroTimes*. How on earth I survived is another story. For now, I am reading my copy from page to page and am looking forward to my next ish. Please enlist me as a MicroTimer.

Chris R. Aranda
San Francisco

Letters are heartily encouraged. Send electronic mail to **microx** *on The WELL, (415) 332-6106. Send US Mail to 5951 Canning Street, Oakland, CA 94609. Please include your real name and the city where you live. Anonymous letters will not be printed.*

COMPUTER SAFARI
A WEEKLY RADIO ADVENTURE
THE HOTTEST COMPUTER DISCUSSION ON THE AIR IN SOUTHERN CALIFORNIA
Tune in. Talk back!
Saturdays 2:30 PM
KIEV 87 AM
The Talk of the Town.
What would you like to know?
WRITE: "Safari" Media West Productions
1041 N. Orange Dr., Hollywood, CA 90038
GREEN SCREEN MONITOR (TTL)
Media West PRODUCTIONS

Computer Applications' Professional Staff Challenges You To Shop Throughout Southern California, Then Come To Us For The Best Package Deal!

8 Reasons to choose the KAYPRO PC!

Deluxe Model from

$1495

1. **Non-Obsolete Design**
   It's a snap to update vital system components - right down to the system's microprocessor.
2. **IBM Compatibility Guaranteed***
   Only Kaypro guarantees IBM compatibility - and gives you three times the IBM standard memory - with the KAYPRO PC's 768KB RAM.
3. **12-Month Warranty**
   A one year parts and labor warranty is standard.
4. **Included Software: WordStar . . . Plus**
   Every KAYPRO PC comes standard with WordStar, MS-DOS 3.2, GW BASIC, K-Desk, PolyWindows, CorrectStar, MailMerge, and more.
5. **Two Speeds For Fast Processing**
   Zip along at 4.77MHz - or zoom with 8.0MHz
6. **Both IBM Video Standards . . . Plus**
   Get maximum software compatibility with IBM monochrome and CGA video standards - and Hercules emulation - built in.
7. **IBM PC AT-style Keyboard**
   Just like the expensive IBM PC AT - complete with tamper-proof keylock.
8. **Made in the USA**
   Few IBM PC or XT compatibles can make this claim.

Increase Sales by 50%

The Selling System

comes to the rescue!

The easy to learn, simple to use personal data base of the people you contact.

Basic Package From

$395

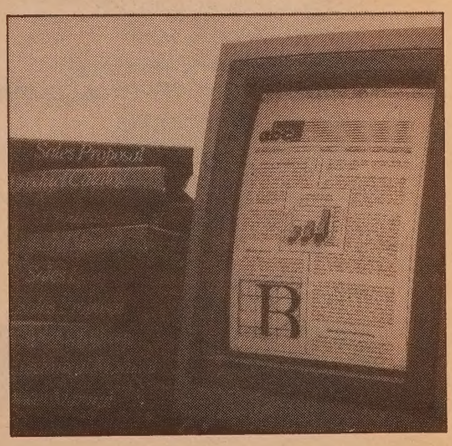
30 day Money Back Guarantee

Plus an extensive array of optional lists ready to run on your system.

Professional Publishing Power for the PC

Create:
- Sales Proposals
- Product Catalogues
- Technical Manuals
- Promotional Materials
- Newsletters

With professional ease and appearance!
Call "K.C." for a desktop publishing evaluation.



ASHTON-TATE EPSON Lotus star CITIZEN IBM EPSON SHOWCASE PROFESSIONAL

COMPUTER APPLICATIONS

"We integrate people and computers"

12792 Valley View Suite F Garden Grove, California 92645

(714) 891-2001

STORE HOURS
Mon.-Fri. 10-7,
Sat. 10-4

AMERICAN EXPRESS DISCOVER master charge VISA

Trademarks: IBM and AT are trademarks of International Business Machines, Inc.; Hercules Computer Technology; Wordstar, CorrectStar, MailMerge, MicroPro International; GW BASIC, Microsoft, Inc; PolyWindows, POLYTRON; K-Desk, Kaypro Corporation.

* For the first 90 days after purchase, Kaypro assures that any major IBM-compatible business software will run on the Kaypro PC or they will grant a trade-in credit toward the purchase of an IBM PC. Trade-in for IBM PC is available only through original Kaypro dealer and IBM suggested-retail price applies.

Take The Lead!

EVERLEAD SPECIAL!

EVERLEAD AT, MODEL I MONOCHROME GRAPHIC SYSTEM

- 80286 CPU, 6/8 MHZ DUAL CLOCK SPEED
- 512 K MEMORY, EXPANDABLE TO 1 MB ON BOARD
- BATTERY BACK-UP CLOCK/CALENDAR
- 200 W POWER SUPPLY
- WESTERN DIGITAL FLOPPY/HARD DISK CONTROLLER
- ONE 1.2 MB FLOPPY, ONE 360 K FLOPPY
- SEAGATE 20 MB HARD DISK
- SERIAL/PARALLEL PORTS
- 5060 AT STYLE KEYBOARD
- PHOENIX BIOS, FULLY IBM.AT COMPATIBLE
- MS-DOS 3.10
- HERCULES COMPATIBLE MONOCHROME GRAPHIC ADAPTOR W/PRINTER PORT
- MONOCHROME HI-RESOLUTION TTL MONITOR
- 48 HOURS BURNED-IN
- 1 YEAR LIMITED WARRANTY

REG. $2,372 LIST $1,925 SALE $1,875

MAXI SWITCH ME-101 AT/XT KEYBOARD

- IBM 101-KEY KEYBOARD COMPATIBLE

REG. $139 LIST $119 SALE $89

EVERLEAD XT-TURBO ENHANCED MODEL MONOCHROME GRAPHIC SYSTEM

- 8088-2 CPU, 4.77/8 MHZ DUAL CLOCK SPEED, 4-LAYER
- 640 K MEMORY ON BOARD
- 150 W POWER SUPPLY
- TWO 360 K FLOPPIES W/ADAPTOR
- 5060 AT STYLE KEYBOARD
- PARALLEL/SERIAL/GAME PORTS
- BATTERY BACK-UP CLOCK/CALENDAR
- SEAGATE 20 MB HARD DISK W/W.D.C.
- HERCULES COMPATIBLE MONOCHROME GRAPHIC ADAPTOR W/PRINTER PORT
- MONOCHROME HI-RESOLUTION TTL MONITOR
- 48 HOURS BURNED-IN, 1 YEAR LIMITED WARRANTY

REG. $1,389 LIST $1,279 SALE $1,219

EVERLEAD XT-TURBO PORTABLE

- 8088-2 CPU, 4.77/8 MHZ, 640 K ON BOARD
- 150 W POWER SUPPLY
- BUILT-IN 9" TTL HI-RESOLUTION AMBER MONITOR
- HERCULES COMPATIBLE MONOCHROME GRAPHIC ADAPTOR W/PRINTER PORT
- TWO 360 K HALF-HIGH FLOPPIES
- XT STYLE KEYBOARD
- 7 EXPANSION SLOTS, HARD DISK OPTIONAL
- 48 HOURS BURNED-IN, 1 YEAR LIMITED WARRANTY

REG. $1,207 LIST $1,019 SALE $989

EVERLEAD SYSTEMS, INC.

HOURS: MONDAY-FRIDAY 9:00–5:00; SATURDAY 10:00–5:00 Pacific Time

TOLL FREE HOT LINE 1-(800) 654-4189, IN CALIFORNIA (714) 775-7115

EVERLEAD SYSTEMS, INC.

16580 HARBOR BLVD., SUITE A
FOUNTAIN VALLEY, CA 92708

I. SYSTEM

EVERLEAD XT

BASIC MODEL $569
- 8088 CPU, 4.77 MHZ, 640K
- 150W POWER SUPPLY
- TWO 360K FLOPPIES W/ADAPTOR
- 5060 AT STYLE KEYBOARD
- ONE YEAR LIMITED WARRANTY, PARTS & LABOR

ENHANCED MODEL $619
- 8088 CPU, 4.77 MHZ, 640K
- 150W POWER SUPPLY
- TWO 360K FLOPPIES W/ADAPTOR
- 5060 AT STYLE KEYBOARD
- PARALLEL/SERIAL/GAME PORTS
- BATTERY BACK-UP CLOCK/CALENDAR
- ONE YEAR LIMITED WARRANTY, PARTS & LABOR

EVERLEAD XT-TURBO

BASIC MODEL $669
- 8088-2 CPU, 4.77/8 MHZ, 640K
- 150W POWER SUPPLY
- TWO 360K FLOPPIES W/ADAPTOR
- 5060 AT STYLE KEYBOARD
- ONE YEAR LIMITED WARRANTY, PARTS & LABOR

ENHANCED MODEL $719
- 8088-2 CPU, 4.77/8 MHZ, 640K
- 150W POWER SUPPLY
- TWO 360K FLOPPIES W/ADAPTOR
- 5060 AT STYLE KEYBOARD
- PARALLEL/SERIAL/GAME PORTS
- BATTERY BACK-UP CLOCK/CALENDAR
- ONE YEAR LIMITED WARRANTY, PARTS & LABOR

EVERLEAD XT PORTABLE

$875
- 8088 CPU, 4.77 MHZ, 640K ON BOARD
- 150 W POWER SUPPLY
- BUILT-IN 9" TTL HI-RESOLUTION AMBER MONITOR
- HERCULES COMPATIBLE MONOCHROME GRAPHIC ADAPTOR W/PRINTER PORT
- 360 K HALF-HIGH FLOPPIES
- XT STYLE KEYBOARD
- 6 EXPANSION SLOTS, HARD DISK OPTIONAL
- ONE YEAR LIMITED WARRANTY, PARTS & LABOR

EVERLEAD XT-TURBO PORTABLE

$909
- 8088-2 CPU, 4.77/8 MHZ, 640K ON BOARD
- 150 W POWER SUPPLY
- BUILT-IN 9" TTL HI-RESOLUTION AMBER MONITOR
- HERCULES COMPATIBLE MONOCHROME GRAPHIC ADAPTOR W/PRINTER PORT
- 360 K HALF-HIGH FLOPPIES
- XT STYLE KEYBOARD
- 6 EXPANSION SLOTS, HARD DISK OPTIONAL
- ONE YEAR LIMITED WARRANTY, PARTS & LABOR

EVERLEAD AT

MODEL I (6/8 MHZ) $1,339
- 80286 CPU, 6/8 MHZ, 512K, EXPANDABLE TO 1 MB ON BOARD
- CLOCK/CALENDAR W/BATTERY BACK-UP
- PHOENIX BIOS, FULLY IBM AT COMPATIBLE
- 200W POWER SUPPLY
- W.D. FLOPPY/HARD DISK CONTROLLER
- ONE 1.2 MB FLOPPY
- 5060 AT KEYBOARD
- MS-DOS 3.10
- ONE YEAR LIMITED WARRANTY, PARTS & LABOR

MODEL II (6/10 MHZ) $1,379
- 80286 CPU, 6/10 MHZ, 512K, EXPANDABLE TO 1 MB ON BOARD
- CLOCK/CALENDAR W/BATTERY BACK-UP
- PHOENIX BIOS, FULLY IBM AT COMPATIBLE
- 200W POWER SUPPLY
- W.D. FLOPPY/HARD DISK CONTROLLER
- ONE 1.2 MB FLOPPY
- 5060 AT KEYBOARD
- MS-DOS 3.10
- ONE YEAR LIMITED WARRANTY, PARTS & LABOR

II. VIDEO DISPLAY SUBSYSTEMS

(COMPLETE PACKAGE OF MONITOR & VIDEO GRAPHIC CARD)

1. MONOCHROME

SAMSUNG 1277 VDS Green — $145, Amber — $150
- SAMSUNG MODEL 1277G MONITOR, TTL INPUT, 12"SCREEN
- MONOCHROME GRAPHIC ADAPTOR W/PARALLEL PRINTER PORT

SAMSUNG 1252 VDS Green — $155, Amber — $160
- SAMSUNG MODEL 1252G MONITOR, TTL INPUT, 12" SCREEN W/TILT & SWIVEL BASE
- MONOCHROME GRAPHIC ADAPTOR W/PARALLEL PRINTER PORT

QUIMAX DM-14 VDS Green or Amber — $215
- QUIMAX MODEL DM-14 MONITOR, TTL INPUT, 13" SCREEN W/TILT & SWIVEL BASE
- MONOCHROME GRAPHIC ADAPTOR W/PARALLEL PRINTER PORT

2. RGB COLOR

MIT-1409 VDS $359
- MITSUBISHI MODEL 1409 MONITOR, RGB INPUT, 14" SCREEN, MULTIDISPLAY MODE
- COLOR GRAPHIC ADAPTOR, 640 × 200 RESOLUTION

TVM-RGB VDS $369
- TVM MODEL MD-3(A) MONITOR, RGB INPUT, 14" SCREEN, MULTIDISPLAY MODE
- COLOR GRPAHIC ADAPTOR, 640 × 200 RESOLUTION

TAXAN 720 VDS $425
- TAXAN MODEL 720 MONITOR, RGB INPUT, 14" SCREEN, MULTIDISPLAY MODE
- COLOR GRAPHIC ADAPTOR, 640 × 200 RESOLUTION

TAXAN 635 VDS $635
- TAXAN MODEL 635 MONITOR, RGB INPUT, ULTRA-HI RESOLUTION 12" SCREEN, MULTIDISPLAY MODE
- TAXAN MODEL 555SP COLOR GRAPHIC ADAPTOR W/ PARALLEL PRINTER PORT, 640 × 400 RESOLUTION

3. EGA COLOR

SAMSUNG EGA VDS $609
- SAMSUNG EGA MONITOR, 14" SCREEN
- ENHANCED GRAPHIC ADAPTOR, 640 × 350 RESOLUTION

TAXAN 760 VDS $729
- TAXAN MODEL 760 EGA MONITOR, 14" SCREEN
- PARADISE AUTOSWITCH ENHANCED GRAPHIC ADAPTOR, 640 × 350 RESOLUTION

III. HARD DISK SUBSYSTEM

(COMPLETE PACKAGE W/CABLES & MOUNTING HARDWARE)

XT 20 MEGABYTE HDS $375
- SEAGATE ST225 HARD DISK, HALF-HIGH, 20 MB FORMATTED, 65 MSEC ACCESSTIME
- WESTERN DIGITAL WX1 CONTROLLER CARD

XT 30 MEGABYTE HDS $445
- SEAGATE ST 238 HARD DISK, HALF-HIGH, 30 MB FORMATTED, 65 MSEC ACCESSTIME
- ADAPTECH CONTROLLER CARD

AT 20 MEGABYTE HDS $495
- SEAGATE ST4026 HARD DISK, FULL-HIGH, 20 MB FORMATTED 40 MSEC ACCESSTIME

AT 30 MEGABYTE HDS $560
- SEAGATE ST4038 HARD DISK, FULL-HIGH, 30 MB FORMATTED, 40 MSEC ACCESSTIME

AT 40 MEGABYTE HDS $675
- SEAGATE ST4051 HARD DISK, FULL-HIGH, 40 MB FORMATTED, 40 MSEC ACCESSTIME

AT 80 MEGABYTE HDS $1,119
- SEAGATE ST4096 HARD DISK, FULL-HIGH, 80 MB FORMATTED, 40 MSEC ACCESSTIME

IV. PRINTERS

CITIZEN

CITIZEN MSP 10 $275
- DOT MATRIX, 160 CPS DATA PROCESSING MODE, 40 CPS NLQ MODE, 80 CPL

CITIZEN MSP 15 $375
- DOT MATRIX, 160 CPS DATA PROCESSING MODE, 40 CPS NLQ MODE, 136 CPL

CITIZEN MSP 20 $345
- DOT MATRIX, 200 CPS DATA PROCESSING MODE, 50 CPS NLQ MODE, 80 CPL

CITIZEN MSP 25 $485
- DOT MATRIX, 200 CPS DATA PROCESSING MODE, 50 CPS NLQ MODE, 136 CPL

CITIZEN PREMIER 35 $470
- DAISYWHEEL, 35 CPS

TOSHIBA

TOSHIBA P321 $470
- IMPACT WIRE DOT MATRIX, 24 PIN, 216 CPS DRAFT MODE, 72 CPS NLQ MODE, 96 CPL

TOSHIBA P351 $970
- IMPACT WIRE DOT MATRIX, 24 PIN, 288 CPS DRAFT MODE, 100 CPS NLQ MODE, 163 CPL

V. MODEMS

1200B INTERNAL MODEM $145
- 300/1200 BAUD, HAYES COMPATIBLE

1200B EXTERNAL MODEM $155
- 300/1200 BAUD, RS232 PORT, HAYES COMPATIBLE

2400B INTERNAL MODEM $299
- 300/1200/2400 BAUD, HAYES COMPATIBLE

2400B EXTERNAL MODEM $309
- 300/1200/2400 BAUD, HAYES COMPATIBLE, RS-232C PORT

VI. ACCESSORIES

JOYSTICK $22

LOGIMOUSE $80
- 9600 BAUD, 200 DPI

MATH CO-PROCESSOR:
- INTEL 8087-2 ..... $169
- INTEL 8087-3 ..... $129
- INTEL 80287-6 ..... $189
- INTEL 80287-8 ..... $289

PARALLEL CABLE
- 6 FEET $11
- 9 FEET $13

SERIAL CABLE $11

2ND SERIAL PORT KIT $20

VII. DOS

MS-DOS 3.10 $49

MS-DOS 3.20 W/GW BASIC $89

VIII. PARTS & COMPONENTS

MOTHER BOARDS

PC/XT STANDARD MOTHER BOARD $90
- 8088 CPU, 8 I/O SLOTS, 4.77 MHZ, 0K, EXPANDABLE TO 640K, BIOS INCLUDED

PC/XT TURBO MOTHER BOARD $169
- 8088-2 CPU, 8 I/O SLOTS, 4 LAYERS, 4.77/8 MHZ SWITCHABLE, 0K, EXPANDABLE TO 640K, BIOS INCLUDED

AT 6/8 MHZ MOTHER BOARD $590
- 80286 CPU, 8 I/O SLOTS, 4 LAYERS, 6/8 MHZ SWITCHABLE, 0K, EXPANDABLE TO 1 MB, PHOENIX BIOS, CLOCK/CALENDAR

INTERFACE CARDS

- MONOCHROME GRAPHIC PRINTER CARD $70
- COLOR GRAPHIC CARD 55
- COLOR GRAPHIC PRINTER CARD 70
- ENHANCED GRAPHIC ADAPTOR 229
- TAXAN 555 SP ULTRA HI-RESOLUTION CGA 189
- TAXAN 560/PARADISE AUTOSWITCH EGA 289
- FLOPPY DISK CONTROLLER (2 DR.) 30
- FLOPPY DISK CONTROLLER (4 DR.) 35
- WESTERN DIGITAL HARD DISK CONTROLLER 109
- WESTERN DIGITAL WA2 AT HARD/FLOPPY DISK CONTROLLER 199
- ADAPTECH RLL HARD DISK CONTROLLER ..... CALL
- MULTI I/O CARD (DISK I/O) 80
- I/O PLUS II CARD 60
- 384K MULTIFUNCTION CARD 75
- 3MB AT MULTIFUNCTION CARD 199
- PARALLEL PRINTER CARD 17
- SERIAL CARD 25
- 512K RAM HALF CARD 49
- 512K RAM FULL CARD 49
- GAME I/O CARD 21
- SERIAL/PARALLEL CARD 75

POWER SUPPLIES

- 150W SWITCHING POWER SUPPLY $65
- 200W SWITCHING POWER SUPPLY 89

CASES

- XT FLIP-TOP CASE $39
- XT SLIDE-IN CASE 39
- AT CASE 79

KEYBOARDS

- 5050 KEYBOARD $55
- 5060 KEYBOARD 65
- 5151 KEYBOARD 70
- 5339 KEYBOARD MAXISWITCH ME-101 89

FLOPPY DRIVES

- TEAC 55BV 360K $95
- TEAC 55GFV 1.2 MB 135
- FUJITSU 360K 85

MONITORS

- SAMSUNG 1277 GREEN $80
- SAMSUNG 1277 AMBER 85
- SAMSUNG 1252 GREEN (W/SWIVEL BASE) 90
- SAMSUNG 1252 AMBER (W/SWIVEL BASE) 95
- QUIMAX DM-14 (G or A) 149
- TVM RGB COLOR 329
- MITSUBISHI 1409 RGB COLOR 319
- TAXAN 720 RGB COLOR 375
- TAXAN 635 RGB COLOR 455
- SAMSUNG EGA COLOR 385
- TAXAN 760 EGA COLOR 495

Take The Lead!

VISA MasterCard

90 days limited warranty, parts and labor. All return merchandise must have return authorization number. Prices subject to change without notice. We are not responsible for typographical errors.

IBM is a Trademark of IBM, Corp.

Immediate delivery. No service charge on VISA, MasterCard. All COD orders cash/cashier's check only. 6% sales tax for California residents.

1-(800) 654-4189 HOT LINE

ORDER TOLL FREE

(714) 775-7115 IN CALIFORNIA

DISKETTES & RIBBONS

CENTECH BULK DISKETTES* (LIFETIME WARRANTY)

5¼" DSDD BLACK	$ .49 ea.
5¼" 96 TPI BLACK	.90 ea.
5¼" AT HD BLACK	1.90 ea.
3½" SSSD BLUE	1.69 ea.
3½" DSDD BLUE	1.76 ea.
8" SSSD BLACK	1.69 ea.
8" DSDD BLACK	2.22 ea.

100% CERTIFIED — 70%+ CLIP LEVEL — ALL DISKETTES MANUFACTURED IN USA WITH USA MATERIALS — MANY COLORS AVAILABLE

CENTECH BOXED DISKETTES* (10/PLASTIC BOX)

5¼" DSDD BLACK	$ 6.60/box
5¼" 96TPI BLACK	10.25/box
5¼" AT HD BLACK	20.25/box
3½" SSDD BLUE	14.00/box
3½" DSDD BLUE	18.65/box

SLEEVES, LABELS, WRITE PROTECTS INCLUDED

— FOR DATA CARTRIDGES, CALL —

TOP QUALITY RIBBONS* —— NOT RELOADS!

CENTRONICS 350/353	$4.71	OKIDATA 80	$1.46	*TYPEWRITERS:*	
DIABLO 620	4.55	OKIDATA 182	3.18	SELECTRIC II CORRECTABLE	$1.91
EPSON LQ1500	3.04	RADIO SHACK DMP400	2.41	SELECTRIC II MULTI-STRIKE	3.48
EPSON LQ1000	4.65	RADIO SHACK LPIII/LPV	3.49	SELECTRIC III CORRECTABLE	4.74
EPSON LQ800	5.20	STAR MICRONICS RADIX 15	6.33	SELECTRIC LIFT-OFF TAPES	.50
EPSON MX100	4.95	TALLY MANNESMAN 180	4.95	OLIVETTI ET101 CORRECTABLE	3.29
EPSON MX80	3.46	TALLY MANNESMAN 1000	3.90	OLIVETTI ET101 MULTI-STRIKE	6.25
IBM 3262	7.15	TOSHIBA P1350 (NYLON)	3.37	XEROX MEMORYWRITER	4.55
IBM 5211	5.84				

MORE RIBBONS AVAILABLE — COLORS TOO — QUANTITY DISCOUNTS AVAILABLE ON ALL RIBBONS

ALSO AVAILABLE: Public Domain Software for MS/PC DOS, CP/M and APPLE — *CALL OR WRITE FOR A FREE LISTING.*

*Minimum order: Bulk Diskettes — 25 pcs; Boxed Diskettes — 2 boxes; Ribbons — 3 pcs.
Terms: Prepaid check, cashiers check, or money order; COD add $1.90; Shipping/handling additional; CA residents add 6%

PINK PANTHER DATA SYSTEMS P.O. Box 271098, Escondido, CA 92027 **(619) 741-7779**

33 GREAT PROGRAMS
ONLY $5.95

for the IBM and compatibles

YOUR COMPUTER IS SMARTER THAN YOU THINK
NEW and EXPERIENCED USERS — This is the handiest package of MUST-HAVE programs you'll ever own — at a GIVE AWAY price.

WHAT'S THE CATCH? Your order includes our eye-opening software preview and catalogue. We want your business.

FOR THE COST OF A LUNCH — you receive these powerful, fully functional programs on three high quality, DS/DD diskettes:

Cut and paste
Cut information out of any program - at any time . . . Paste it into any other program

Scroll and recall past screens
Scroll your screen backwards . one by one review of every screen that scrolled by

Task-switching
Run more than one program at the same time . . . Access DOS within any program

Manage memory resident programs
Release any program from memory - at any time - without rebooting your computer

Dramatic disk drive speedup
Turbo charge your floppy disk drives . . . make all your programs run much faster

PLUS 28 MORE POWERFUL PROGRAMS

LIMITED INTRODUCTORY OFFER

ONLY ONE ORDER PER CUSTOMER
YOUR SATISFACTION ASSURED — 30 DAY MONEY BACK GUARANTEE

NAME _____ my monitor displays graphics yes ☐ no ☐
ADDRESS _____ my monitor is color
CITY/STATE/ZIP _____ yes ☐ no ☐

☐ enclosed is my check $5.95 + $3.00 for shipping and handling

NATIONAL SOFTWARE LABS
13376 Washington Blvd. #7 L.A. Calif. 90066
for more information call **(213) 827-7889**
NO DROP-INS PLEASE

CALENDAR OF EVENTS

January 8-10 Macworld Expo. Moscone Center, San Francisco. Call Mitch Hall Associates, (617) 329-7466 for information.

January 10 Computer Swap. LA County Fairgrounds, Pomona. Call (800) 252-7927 for information.

January 24 Computer Swap. Del Mar Fairgrounds. Call (800) 252-7927 for information.

January 27-30 Troubleshooting The IBM PC. Anaheim. Course sponsored by Movonics Company. Call Dick Gasparini or Karen Roobler, (415) 960-1250 for information.

January 28-31 Seybold Conference On Desktop Communications. Hyatt Regency, San Francisco. Call (213) 320-9151 for information.

February 2-5. Troubleshooting The IBM PC. San Fernando Valley. Course sponsored by Movonics Company. Call Dick Gasparini or Karen Roobler, (415) 960-1250 for information.

February 2-5 Using Lotus 1-2-3 In Business Applications. Los Angeles Airport Hilton. Seminar sponsored by American Management Association. Call Vern Lautner at (212) 903-8208 for information.

February 3-6 "Machine Vision and Image Recognition." San Diego. Course sponsored by Integrated Computer Systems. Call (800) 421-8166 for information.

February 3-6 "Effective Skills for Technical Managers." Anaheim. Course sponsored by Integrated Computer Systems. Call (800) 421-8166 for information.

February 5-7 Advanced Lotus 1-2-3. Los Angeles Airport Hilton. Seminar sponsored by American Management Association. Call Vern Lautner at (212) 903-8208 for information.

February 18-21 How To Use Your Personal Computer. Sheraton Plaza La Reina, Los Angeles. Seminar sponsored by American Management Association. Call Vern Lautner at (212) 903-8208 for information.

February 23-24 Troubleshooting The IBM PC. San Diego. Course sponsored by Movonics Company. Call Dick Gasparini or Karen Roobler, (415) 960-1250 for information.

February 28 Computer Swap. Orange County Fairgrounds. Call (800) 252-7927 for information.

March 3-6 "Designing Signal Processors with DSP and Bit-Slice Chips." Anaheim. Course sponsored by Integrated Computer Systems. Call (800) 421-8166 for information.

*As a community service, **MicroTimes** lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month preceding the month of the issue in which you'd like it to appear (i.e. the deadline for the December issue is November 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.*

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

The Xenon Team

★ ★

★ FEATURING OUR SUPERSTARS ★

Let us introduce you to our people, our products, and our service. We have a history of success we would like to share. Every member of the "Xenon Team" has been carefully selected to ensure their expertise and their ability to serve your needs. We support our people with a large inventory of quality, name brand products. One reason Xenon has continued to grow, even when others have failed, is teamwork. We believe that's the Xenon difference. Xenon wants to be your major supplier of micro-computer hardware and peripherals. Check our list of features below. Then give us a call and put the "Xenon Team" to work for you.

- Full service, value-added
- Top name brand manufacturers
- Total technical and sales support
- In-depth inventory
- High demand, hard-to-find items
- Individual components through complete systems integration
- Fast deliveries, "will calls," and same day shipping
- Competitive pricing and volume discounts
- RMA department with dedicated phone lines

"LET US EARN YOUR RESPECT"

ADAPTEC
ARCHIVE
AST RESEARCH
AT&T
BTC
CIPHER
CITIZEN
COMPAQ
EPSON
FUJITSU
HEWLETT-PACKARD
IBM
IRWIN
KEYTRONIC
MICROSOFT
MINISCRIBE
MULTITECH
NEC
NCL
PACKARD BELL
PANASONIC
PC&C
PRIAM
QUIMAX
RITEMAN
RODIME
SAMSUNG
SEAGATE
SMART TEAM
TAXAN
TEAC
TOSHIBA
TTX
WESTERN DIGITAL
XENON

Xenon USA

A FULL SERVICE DISTRIBUTOR OF QUALITY COMPUTER PRODUCTS

CALL TODAY

(714) 250-4438

17795-F Skypark Blvd., Irvine, CA 92714, **RMA:** 714/261-7807-**Telex:** 291642 PCC UR-**FAX:** 714/250-4513

IBM is a Registered Trademark of International Business Machines Corporation. COMPAQ is a Registered Trademark of COMPAQ Computer Corporation

BUT JAN LEWIS SAYS . . .

In This Corner – UNIX

Statement: The time is right for UNIX to break out from the limits of university and engineering applications into mainstream microprocessing.

Question: Is this statement from 1981? 1986? or 1992? Like many of the great market factors, UNIX has found a niche, but has not succeeded in the mainstream. Is the market finally ready for UNIX to drop down into the MS-DOS world and transform our stand-alone computers ?

Through the magic of the silicon wizards, what was standard for mini and mainframes is ready for the desktop. Unfortunately, DOS is not.

As the user community becomes more sophisticated, the desire is growing for the "multis": MultiMIPs, multitasking, multiuser, multisite networking and multiple file service. But many of DOS' virtues — its "relative" simplicity, adaptability and minimum drain on micro resources — are also its weaknesses. Furthermore, efforts to fit these multi-square pegs into DOS' round hole have been slow and frustrating.

Now, through the magic of the silicon wizards, what was standard for mini and mainframes is ready for the desktop. Unfortunately, DOS is not. And for the "multis" to become pervasive, the industry needs a standard operating system.

Right now, UNIX is the main contender for that standard. For all the bitching and moaning and grumbling about UNIX, it has many virtues: it works; it has a large base of applications and programmers; and it is supported by many different companies for very different hardware. Its vices are also impressive: it takes mountains of storage and processing, and is not oriented to commercial-type applications.

But probably the most oppressing and depressing fact is the UNIX concept of "user friendly." Hard-to-learn-but-user-friendly is a contradiction in terms. The issue for UNIX is not how user friendly it is—but how user hostile. **!chmod go+wx /uh/31/maddog/ unixvs*.compars.readme** may be powerful, but not friendly. And UNIX is not only hard to learn, it is even hard to relearn. With UNIX, I fear there are users who take too long a coffee break and have to retrain. Not everyone spends eight hours a day squinting at a monitor. Casual users, who constitute a majority of business users, must be able to retain fluency without being forced to relearn the grammar each time they sign on.

As the "Keeper of the DOS," Microsoft is also a contender for the "multi" standard. It already is deep into UNIX, through Xenix. And more and more, MS-DOS and UNIX are merging in structure and functionality. As each new version of DOS begins to look more like UNIX, walk more like UNIX and quack more like UNIX, we can only hope the best of both prevail. (Can you imagine the worst of both worlds — the user friendliness of UNIX with the resource management of DOS?)

As each new version of DOS begins to look more like UNIX, walk more like UNIX and quack more like UNIX, we can only hope the best of both will prevail.

In contrast to Microsoft moving up from the PCs, IBM, the third contender, can move down from the 370 to scoop up and interconnect the stand-alones. The very nature of the multis requires sharing resources and access. Simple security, which is largely ignored by micro users short of locking their floppies in a file cabinet, is a major headache for shared systems.

While large multi-user or interconnected systems are new territory for companies that grew up on micros like Microsoft, IBM has built its success on the backbone of centralized control and administration. Its history and account control philosophy give it a natural edge in support of multi-user, multi-resource computer applications. The microprocessor moved the computer user away from centralized control. The new generation could move the user back. All this new found silicon power has not been accompanied by more support and systems management power. And the micro industry has been slow to develop the infrastructure that is common in the mini and mainframe world. Linking users together to share files requires equal amounts of technology and management. Much of the silicon opportunity will be wasted if silicon power is mistaken for systems power. □

The Pros And Cons Of Slide Presentations

There are always lots of hot new trends in the high tech fast lane: some of them travel well, others crash and burn. But outside the fast lane, plenty of traffic travels in solid but undramatic applications — applications like presentation graphics.

Like PC spreadsheets, presentation packages can turn good professionals into systems operators.

Personal computers preparing slides and overheads show how PCs can enter and open a market by expanding user access. But they also show the limits of a niche market and how technology can create and later shift opportunity.

General Parametrics (which markets Videoshow) has been able to succeed because it replaces existing, expensive equipment and processes with lower cost and commonplace PC hardware. But just as General Parametrics was able to take sales away from other vendors, it also is vulnerable to changes in technology. New advances, like the TI and Intel graphics chips, could impact vendors like General Parametrics. In addition, there is an opportunity for other vendors to link desktop publishing and advanced graphics to presentation graphics output.

Granted, for many presentations, visuals are a must for keeping the audience's attention and making a good impression. But, despite claims to the contrary, slides are not right for every presentation. Even if the equipment is available, there are times when overheads are just fine.

While slides can be impressive, they connote a one-way, formal presentation. They are cold and non-interactive: You can't write on the screen to underline a point or add a comment. Because slides are a read-only medium, they discourage the audience from breaking in with questions.

In contrast, overheads are hot and interactive. They actually encourage audience participation. You can write on them as you go, drawing arrows and underlines. Room lights are up so the audience become participants. Overheads can also be made at the last minute. How often has a secretary received a bunch of scribbled notes to quickly type onto overheads five minutes before the presentation? You just can't do that with slides. Slide production is still a function of the "graphics" person, whether in a remote department or as a designated "slider" within the group. Like PC spreadsheets, presentation packages can turn good professionals into systems operators.

Once everyone in the office can turn out quality slides like tortillas, what is their true value?

Much of the current presentation graphics technology really moved the production out of a remote department, but it still is not really "personal" production. The user interfaces on presentation graphics software are slow and the formats are quite rigid. Videoshow's Baskin may offer his 31 flavors of charts and tables, but everyone wants to make "just a little change."

What happens when you move a function from the complex and arcane to the simple and open? Is it like butter? The more you spread it around the thinner it becomes? A good analogy might be the impact of word processing. Remember when you received a personalized letter in proportional spaced printing, you assumed it really was personal? Now whenever you receive a "personalized" letter (You may already be a winner, Ms. Occupant!) you know it is done by a machine and most impersonal.

Once everyone in the office can turn out quality slides like tortillas, what is their true value? For the truly artistic this may be a boon, but for many others it may hide poor ideas and embarrassing data in pretty packages. Slides may have the sizzle, but they don't guarantee the quality of the steak. □

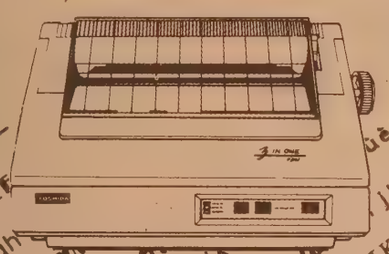
Jan Lewis is a well-known industry analyst and president of the Palo Alto Research Group, a consulting firm for the microcomputer industry. This article has been reprinted with permission from Computer Insider, *PARG's newsletter.*

24 PIN / 9 PIN QUALITY / PRICE

DID YOU KNOW that you can get exceptional letter quality, hi resolution graphics and blazing speed all in one printer . . . at a truly affordable price?

DID YOU KNOW that you can produce a distinctive newsletter, with different type fonts etc., without having to buy a $10,000 desktop publishing system?

DID YOU KNOW about Toshiba's 24-pin printers with 9-pin prices accurately called The Affordable Class?



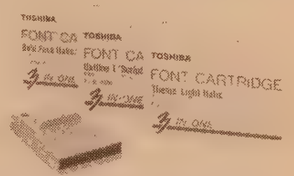
THREE IN ONE

Both the Toshiba P321 and P341 printers have capabilities which put them in a class of their own.

In addition to excellent letter quality printing and hi-resolution graphics, these printers use type font cartridges and support additional fonts which can be downloaded from diskettes to provide you with essentially unlimited typestyles!

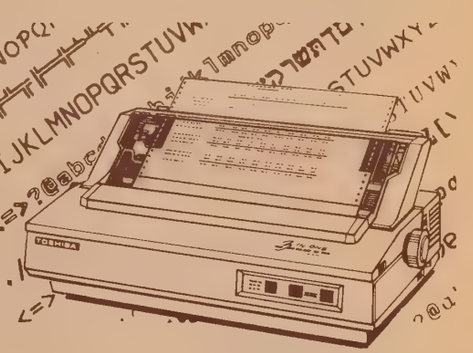
And that's not all. Additional options include IBM graphics printer emulation and Qume Sprint 11 emulation for sophisticated word processing.

IF YOU DIDN'T KNOW . . . CALL ONE OF THE DEALERS LISTED BELOW.
You have to see Toshiba quality to believe it. You will be very pleased at what you'll see!



LIMITED OFFER:
Buy your Toshiba P321 or P341 before February 15, 1987 and receive a free type font cartridge!

TOSHIBA



(Toshiba type fonts)

Priority One Electronics
21622 Plummer St.,
Chatsworth, CA
818 709-5464

N R Systems
8363 Reseda Blvd., #14
Northridge, CA 91324
818 349-9898

Jade Computer Products
21800 Ventura Blvd.
Woodland Hills, CA
818 716-6120

Source Business Systems
5050 Canoga Ave., #400
Woodland Hills, CA 91367
818 883-8182

ASUCLA Computer Store
308 Westwood Plaza
Los Angeles, CA 90024
213 825-6952

Starwares Inc.
930 W. Hyde Park
Inglewood, CA 90302
213 677-6969

Software Galleria
1200 N. Pacific Coast Highway
Hermosa Beach, CA 90254
213 372-8441

Zebra Computer Products
1024 Pico Blvd.
Santa Monica, CA 90405
213 450-7330

Software Central
650 E. Colorado Blvd.
Pasadena, CA 91101
818 793-4101

RGB Computing
1111 E. Chevy Chase Dr.
Glendale, CA 91205
818 240-0422

P C Systems Design
455 N. Lake Ave.
Pasadena, CA 91161
818 792-1391

Micro Trends International
750 E. Colorado Blvd.
Pasadena, CA 91101
818 793-7831

Priority One Electronics
18241 McDermott Ave.
Irvine, CA 92714
714 660-1411

National Computer Specialties
8392 Leman Ave.
La Mesa, CA 92041
619 698-7797

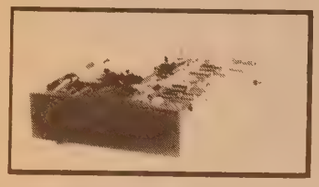
Software Service Center
6667 Indiana Ave.
Riverside, CA 92506
714 787-4833

Computer Trends
17632 Irvine Blvd., #K
Tustin, CA 92680
714 730-6794

BROUGHT TO YOU BY
Gates DISTRIBUTING

THE GREAT

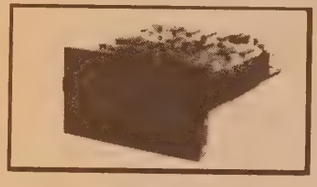
Floppy Drive Half High



40 Track ..... $79 ea
80 Track ..... $89 ea

For IBM-XT

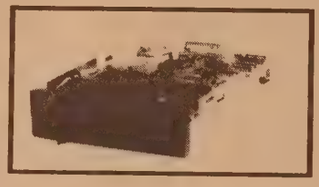
Floppy Drive Full High



80 Track ..... $69 ea

96TPI

1.2 Floppy Drive



$129 ea

For IBM-AT and Compatibles

Hard Drive Specials

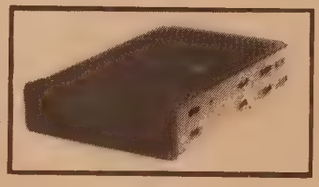
5 Meg ..... $99 ea
FULL HIGH

10 Meg ..... $129 ea
FULL HIGH

20 Meg ..... $189 ea
FULL HIGH
Formats to 15.8

40 Meg ..... $349 ea
FULL HIGH
Formats to 32.8

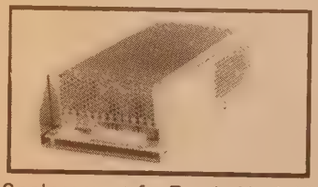
60 Meg Tape Back Up For IBM PC/XT/AT and Compatibles



$649 ea

Includes: Controller, Cables, Software, Manual & Mounting Hardware

ASTEC 65 Watt Switcher



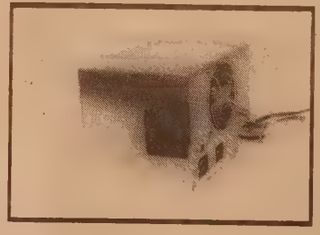
Replacement for Tandy Model IV
KAYPRO-EAGLE

Outputs
+ 5 @ 6.0A
+ 12 @ 1.5A
+ 12 @ 2.1A
- 12 @ .25A
DC

$39 ea 2 For $65

Dimensions: Length 8.0", Width 4.4", Height 2.4"

200 Watt Power Supply



For IBM-AT and Compatibles

$129 ea

+ 5V - 7.0 - 20 AMPS
+ 12V - 2.5 - 7.3 AMPS
- 12V - 0 - 0.3 AMPS
- 5V - 0 - 0.3 AMPS

Double your Disk Drive Capacity

½ High Version/$99
Includes Software

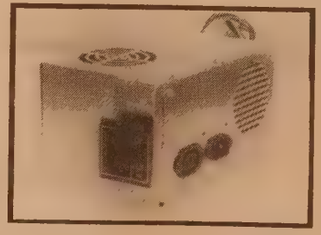
720K Formatted
DS/DD 80 Track

Compatible with all IBM software PC DOS (3.1)
Allows you to read IBM Formatt Diskettes
Requires (1) 40 Track DS/DD Drive
Package Includes: 1 SA460 DS/DD 96TPI Drive, Device Driver and Installation Instructions.

$79 ea Includes Software

Device Driver Sold Separately for $30

165 Watt Power Supply



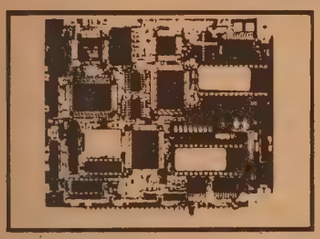
For IBM-XT and Compatibles

$79 ea

+ 5V - 2.3 - 15 AMPS
+ 12V - 0.4 - 7 AMPS
- 12V - 0 - 0.25 AMPS
- 5V - 0 - 0.3 AMPS

PERIPHERAL SALE

NCL 5127 Winchester Disk Controller For the IBM PC/XT and Compatibles



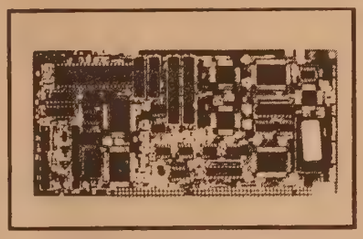
$109 ea

The NCL 5127 allows the user various options and applications from desk tops to portables. It's compact size is achieved through CMOS surface mount technology without sacrificing performance or quality.

*Add $6 for Set of Cables

- ST 506/412 Interface
- Drive Power Connector
- Switch Selectable Drive Types
- 625Kbyte Data Rate
- Operates With PC-DOS and MS-DOS
- Compact Size (3.9"x4.7")
- Automatic Surface Scan During Format
- Partition Option for High Capacity Drives
- Supports up to 16 Heads and 1024 Cylinders
- Programmable Interleave

NCL 5125 Winchester/Floppy Disk Controller For the IBM AT and Compatibles



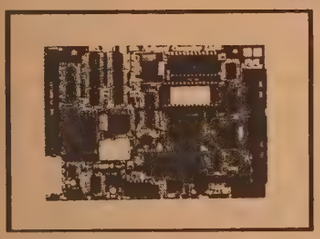
$199 ea

The NCL 5125 is a compact Winchester/Floppy combination controller retaining the "XT" height utilizing surface mount technology.

- Compact Size (3.9"x8")
- ST 506/412 Interface
- Controls Up to 2 Winchesters
- Supports Concurrent
- 32 Bit ECC
- Supports 1.2 Mbyte and 360 Floppy Drives
- 2 Mbyte Data Transfer
- Supports up to 16 Heads and 2048 Cylinders
- Overlapped Seeks

NCL 3011 SASI/3016 SCSI

Winchester Disk Controller SASI/SCSI Interface Compatibles



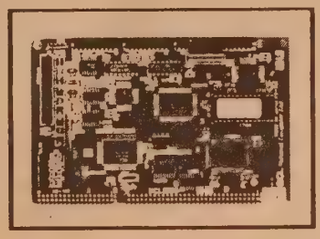
$149 ea

NCL offers you the choice of either SASI or SCSI interface capabilities by utilizing full scale IC integration in a compact 3.5" form factor board.

NCL 3011 SASI
- Compact Size (4"x5.75")
- 1 Mbyte/sec Transfer
- One to One Interleave
- Supports up to 16 Heads

NCL 3016 SCSI
- Compact Size (4"x5.75")
- 1.5 Mbyte/sec Transfer
- Disconnect/Reconnect and Arbitration
- Intelligent Bus (Multiple Hosts)

NCL 5126 Winchester Disk Controller For the IBM AT and Compatibles

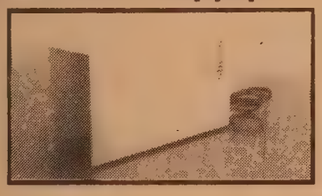


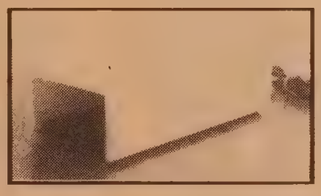
$179 ea

The NCL 5126 is designed exclusively for Winchester only allowing the floppy chip to reside on the main CPU board.

- Compact Size (3.9"x6")
- 2 Mbyte Data Transfer
- Controls Up to 2 Winchesters
- Supports Concurrent Data Operations
- 32 Bit ECC
- ST 506/412 Interface
- 16 Bit Data Transfer
- Supports up to 16 Heads and 2048 Cylinders
- Programmable Disk Parameters
- Overlapped Seeks

External Hard Disk Case with Power Supply



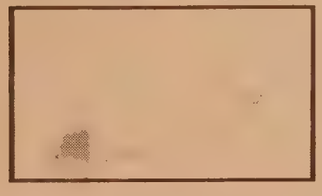


Case for (1) Full High Hard Drive ..... HD-2 ..... $89 ea
will accommodate 2 Half High Drives with 38 watt power supply

Same as above but with 76 watt power supply ..... HD-2A ..... $149 ea

All units come with 6 ft. power cord
Add $6 to cover shipping on each case
Cables for Case for IBM/PC/XT/AT and Compatibles ..... $27 ea

External Floppy Disk Drive Case with Power Supply



Case for (2) Half High Floppy Drives ..... FD-2 ..... $89 ea
complete with 38 watt power supply

Case for (1) Full High Floppy Drive ..... FD-1 ..... $59 ea
complete with 26 watt power supply

All units come with 6 ft. power cord
Add $6 to cover shipping on each case
Cables for Case for IBM/PC/XT/AT and Compatibles ..... $27 ea

IBM PC/XT/AT IS TRADEMARK OF IBM

TO ORDER:
Please send cashier's or certified checks ONLY
Add $3 shipping per item
Master and Visa accepted
CA residents add 6% sales tax
Canadian residents add $10 shipping
Exchanges only/no cash refunds
Software is non-refundable

western systems
950 N. Elm St., Orange, CA 92667
(714) 538-4323

Industry News

By Hartley Lesser and Patricia Lesser

More Postscript Support

Adobe Systems Inc. (Palo Alto, CA) has announced that the Diconix, ITT Qume and NEC Information Systems now support the PostScript page description language. The new PostScript compatible inkjet printer announced by Diconix is the first printer capable of automatic duplex printing. Qume will incorporate PostScript into its Qume ScripTEN printer, and NEC will do likewise with the SilentWriter LC-890.

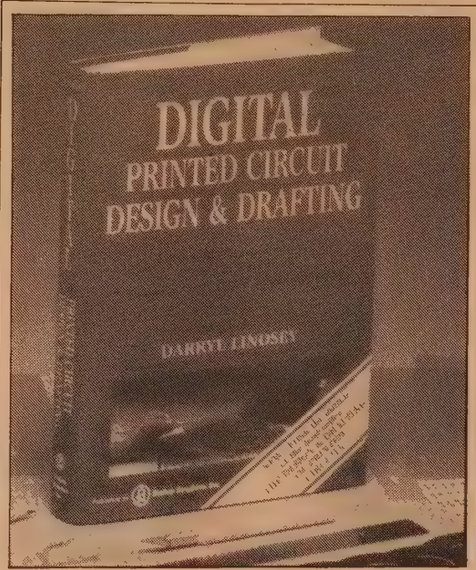
DP Via Telecomm

Alphabet Soup Inc. (San Francisco, CA) has announced a new telecommunications service called DesigNet for electronic publishing and CAD marketplaces. Users of this service can send their electronic files via modem for typesetting laser printing and plotting. Libraries of ready-to-use graphics, type fonts, software and support services will also be available.

Posner Leaves A-T, Goes To Ansa Ansa

Software (Belmont, CA) has named Ronald S. Posner as the company's new president and CEO. Posner, who recently resigned from Ashton-Tate, succeeds Steve Dow, who will become vice chairman of the board at Ansa.

Hartley and Patricia Lesser are veterans of computer publishing, having published over 500 feature articles and reviews in computer magazines worldwide and assisted in founding four national computer publications, including inCider. *They have also worked at* PC World, *Softalk Publishing, and several other publications, and founded two online computing magazines,* MicroToday *and* Corporate Computing. *They currently publish and edit* Computing Today! *a weekly computer magazine on the GEnie personal network and the NewsNet business network. They can be reached at (415) 828-1528.*



A new kit from Bishop Graphics offers a learn-by-doing approach to circuit board design and drafting.

Learn-By-Doing Drafting Kit

Bishop Graphics (818/991-2600) has announced a complete "learn-by-doing" kit for beginners and professionals seeking to develop or advance their skills in digital printed circuit board design and drafting. The combination package consists of a 432-page hardcover text and a companion kit of over 480 professional Bishop Graphics design and drafting aids for doing the actual PCB artwork exercises in the text. The Digital Printed Circuit Design And Drafting combination text and drafting kit is available for $99.

Vertical Marketing Association

After a meeting of its supporters and the members of its Board of Advisors during COMDEX/Fall, the Association of Vertical Market Computing has announced its official formation. This worldwide association is devoted to the interests of companies and individuals involved in the many vertical markets within the microcomputer industry. Call 714/676-9549 for more information.

News From Autodesk

Autodesk, Inc. (Sausalito, CA) has turned over the reins of control to former CFO Alvar Green, now executive vice president. Co-founder John Walker will retain his title as chairman of the board. The company has also announced that *AutoCAD* is now fully compatible with the Compaq Deskpro 286.

Another Borland Acquisition

Borland International (Scotts Valley, CA) has acquired *ClickOn Worksheet*, a Mac spreadsheet software program, from T/Maker Company.

CMS Signs OEM Agreement

CMS (Costa Mesa, CA) has signed an OEM purchase agreement with Cipher Data Products, Inc., valued at $5 million in its first year. This agreement establishes a two-year contract under which CMS will purchase Cipher's 1/4" and 1/2" tape drives and subsystems for use in CMS mass storage products.

Cordata Adopts DDL

Cordata Technologies (Thousand Oaks, CA) will adopt Imagen's DDL document description language for its Intellipress turnkey desktop publishing system. The company has also signed a bundling agreement with Aldus Corp., allowing Cordata to bundle *PageMaker* software with its turnkey desktop publishing system.

Nominations Invited For Fluegelman Award

PCW Communications invites nominations for the first annual Andrew Fluegelman Award, which will honor a programmer or group of programmers who has made a significant contribution to the software fields. A cash prize of $5000 will be presented to the winner in March.

Says David Bunnell, chairman of PCW Communications and the late Mr. Fluegelman's colleague at *PC World* and *Macworld*, "This award will highlight the software industry's pursuit of excellence, and also bestows a special accolade on a programmer whose work reflects the spirit and high standards that Andrew had set." Any commercial, shareware or public domain personal computer software developed by an individual or team is eligible; anyone who did not participate in developing the software may submit a nomination. While companies are encouraged to nominate software which they market, it should be noted that the nomination should be for individuals, not companies.

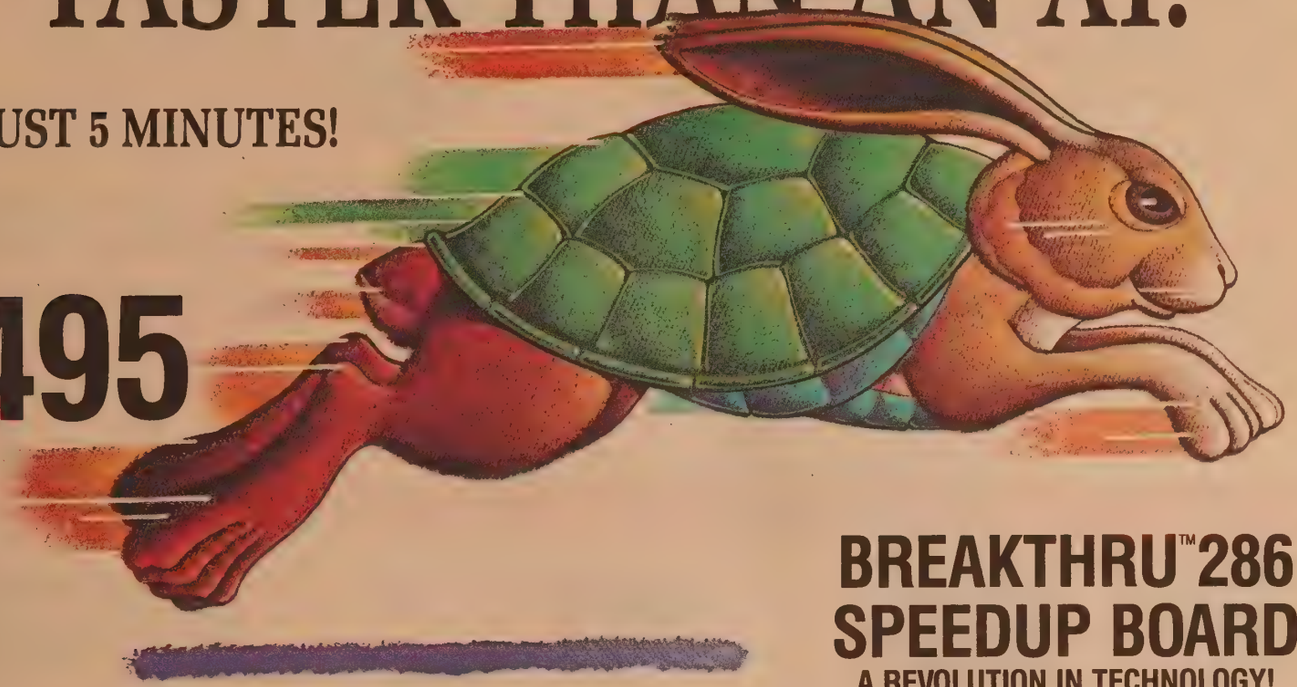
The software will be judged by these criteria: it advances the state of the art of personal computing, manifests innovation in concept and design, and demonstrates orientation to personal computer users. Any software released between January 1, 1983 and December 31, 1986, may be nominated. This year's judges, who will evaluate ten finalists chosen by a screening committee, are Daniel Bricklin of Software Garden, Harry Miller, editor of *PC World*, Jerry Schneider of the Capitol PC User Group, Bob Wallace of Quicksoft, and Camilo Wilson of Lifetree Software.

The award's cash prize is drawn from the Andrew Fluegelman Fund, which was established after Fluegelman's death in 1985 to commemorate his contributions to the software field. Fluegelman wrote the popular PC-based telecommunications program *PC-Talk* and devised the innovative system he called "freeware" to market it.

Nominations must be postmarked no later than February 1, 1987. To obtain nomination forms, write to Andrew Fluegelman Award, PCW Communications, Inc., 501 Second Street, Suite 600, San Francisco, CA 94107, or call Shirley Gines at (415) 546-7722.

MAKE YOUR IBM PC OR XT FASTER THAN AN AT.

IN JUST 5 MINUTES!



$495

BREAKTHRU™286 SPEEDUP BOARD

A REVOLUTION IN TECHNOLOGY!

Don't Take Our Word For It. Use The Breakthru 286 Speedup Board For 15 Days. If You Are Not Totally Satisfied, Return It For A Full Refund.

HERE'S WHY IT'S SO SPECIAL!

1. FIRST, it installs so easily.
It's a half slot card, only 5" in length. You don't give up a full slot. And it comes with simple instructions.

2. SECOND, it is advanced.
The 286 replaces the CPU of the PC or XT with an 80286 microprocessor that's faster than that found in an AT.

3. THIRD, it's fully compatible.
Unlike others, it works with the Compaq computer and other compatibles. And all existing RAM, hardware, and peripheral cards can be used without software modification.

4. FOURTH, it is the BEST there is!
The **BREAKTHRU 286** is unequivocally the best executed and most completely reliable speedup board manufactured today. Just look at the benchtest comparison chart in this ad to see for yourself.

HERE'S WHY IT'S THE BEST!

1. Intel 286 processor.
The Intel 80286 processor powers the IBM AT. Other boards like Orchid and Quadsprint use outdated processors.

2. Cache memory.
The 286 accesses data and instructions 16 bits at a time. Therefore, you must use the caching technique to process. Cache as used by the **BREAKTHRU 286** is more cost effective and more compatible.

3. 8 MHz clock speed.
Most boards using a 286 & cache memory run at 7.2 MHz. Ours runs a FULL 10% FASTER than Victor, Mountain, or PCT. When time is of the essence, our 286 stands alone.

4. 16K Cache.
The **BREAKTHRU 286** Speedup Board has a 16K cache. The other boards have only half as much.

5. Buffered writes.
The **BREAKTHRU 286** provides on board logic to buffer the write, enabling the processor to keep going at full speed.

6. Byte oriented cache reads.
The other boards always update the cache a word (2 bytes) at a time. **BREAKTHRU 286** is smart enough to know when it only needs one byte, and only fetches one.

7. FREE Lightning disk speedup.
No speedup board can accelerate disk access. But with **BREAKTHRU 286,** we INCLUDE **FREE LIGHTNING SOFTWARE** which has already sold thousands of copies at $89.95.

8. Works with compatibles.
Other boards won't work with Compaq or many compatibles. Our **BREAKTHRU 286** works like gangbusters.

BREAKTHRU™ 286 AND **LIGHTNING™** ARE MANUFACTURED BY

PERSONAL COMPUTER SUPPORT GROUP

TABLE OF BENCHMARK RESULTS

	Victor	IBM AT	BREAKTHRU 286
Clock Speed in MHz	7.15	6	8
Empty Loop	2.81	1.99	3.34
Integer Add fr. mem.	3.74	3.35	4.41
Integer Mult. fr. mem.	5.78	6.06	8.55
Fl. pt. w/out coproc.	3.63	3.33	4.42
Fl. pt. w/8MHz cop.	1.65	n/a	1.92
Prime number test	2.47	1.95	2.85
Lotus 123 macro (640K)	3.16	2.64	3.69
Lotus 123 macro (256K)	3.07	1.77	3.54
Norton System Info Test	6.54	5.73	7.34

In every case but clock speed, the numbers indicate how many times faster a test is performed than on a regular IBM PC.

Works with all IBM PCs, XTs, and Compatibles. Software compatibility: Lotus, Intel, LAN, Microsoft, etc.

Distributed by:

B.E.T. **ELECTRONICS**
2777 Orange-Olive Avenue
Orange, CA 92665

DEALERS: Call for quantity pricing.

FREE
LIGHTNING™ SOFTWARE
w/ANY Board Purchased
(Reg. price of software—$89.95)

Call TOLL FREE In California
1-800-222 4 BET

ORDER TODAY!!
(714) 974-9005

LET'S GO!!
I'm Ready to SPEED IT UP!!

Send me my **BREAKTHRU 286** Speedup Board and FREE Lightning Software RIGHT NOW!! I CAN'T WAIT!!

Name _____
Address _____
City _____
State _____ Zip _____
Phone _____

Card # _____ Exp. Date _____
Name on card _____

Terms: CA residents add 6% sales tax. Shipping add $6 for UPS.

Mail to: **BET Electronics,**
2777 Orange-Olive, Orange CA 92665

Breakthru 286 and Lightning Software are registered trademarks of Personal Computer Support Group. IBM is a registered trademark of International Business Machines.

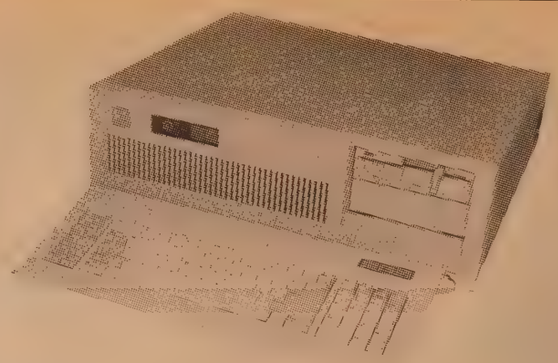
CLUB-286

AUTO CAD
RUNS Xenix™
NOVELL NETWORK
MULTI TASKING

IMMEDIATE DELIVERY

$755 Basic system

MADE IN U.S.A.
NOT A FOREIGN COPY
SERVICED IN U.S.A.
Extended Warranty Available



Option A: 1.2MB Floppy Drive
WD HD/Floppy Controller $320

Basic system 8 MHZ CPU with option A $1075
Basic system 10 MHZ CPU with option A $1125

- MAXI switch keyboard
- Free Set-Up utility
- 48 Hours Burn-in
- 195W Power Supply
- 33% faster than IBM AT
- 512K RAM, expands to 1 MB
- 6/8/10 MHZ, 8MHZ CPU Chip
- Full Documentation and Manual
- Clock/Calendar with Battery Backup
- Fully Compatible BIOS, written in U.S.A.

FREE
Fully configured and tested for your system requirements

- ☐ With 20MB Seagate 65MS 1/2 Ht. $355
- ☐ With 20MB Seagate 39MS Full Ht. $549
- ☐ DOS 3.1 $85
- ☐ G.W. Basic $95
- ☐ 80287-8 8MHZ $225
- ☐ 80287-5 5MHZ $195

Made in U.S.A.

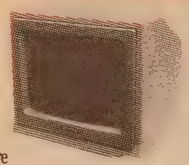
One Year Limited Warranty
Dealers and Corporate qty. Discounts available

CLUB 286 Mono AT compatible system
* Basic system as described above plus Monochrome Display card and IBM quality Monochrome monitor **$1311**

CLUB 286 Color AT compatible system
* High quality
* Basic System as above
* Plus color Display card and color monitor
* Fully Assembly and tested, no installation required **$1508**

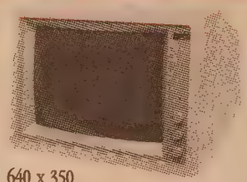
CLUB 286 Color AT system **$1742**

MONO MONITOR



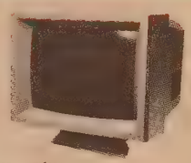
- Nonglare
- 12″ screen
- 800 x 350 resolution
- FCC class 'B' approval **$138**
- IBM Color **$345**

EGA MONITOR



- 640 x 350
- 640 x 200
- EGA and CGA **$480**
- FCC class 'B' approval

NEC MULTISYNC



- 800H x 560V
- Test Mode Switch
- No Installation required **CALL**
- EGA, PGA, CGA compatible

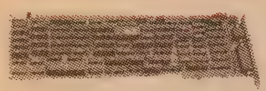
CLUB EGA GRAPHIC CARD

Quantity discounts available
Made in U.S.A.
Complies with FCC

- Parallel Port
- Fully IBM compatible
- 256K video memory
- Runs color/mono display
- 16 colors 640 x 350 resolution

$228

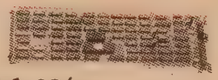
UNIVERSAL DISPLAY



- Parallel Port **$248**
- 132 columns text, color or mono
- Mono Display Hercules Compatible
- FCC class 'B' approval
- One Year Limited Warranty

HERCULES COMPATIBLE

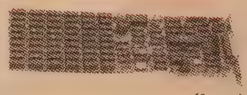
132 Columns



Club 384
- Printer Port
- Software Switchable **$99**
- Monochrome Graphics
- Runs Lotus 123 Graphics
- Run 132 x 44 column display
- Comply with FCC class 'B'

Made in U.S.A.

6-PAC COMPATIBLE

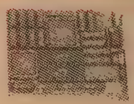


(for PC)
- Serial Port **$88**
- Parallel Port
- 0-384K Memory
- Clock/Calendar
- FCC class 'B' approved
- Game Port and software

CLUB TURBO

- w/128K RAM **$399**
- Runs 80287 math-processor in 5 MHZ or 8 MHZ speed
- Runs 7 times faster than PC or 33% faster than the IBM AT

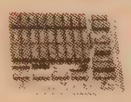
MICRO EGA



Club Micro EGA $238
- External Switch
- 640 x 350 EGA
- 320 x 200 CGA
- 640 x 350 monochrome
- FCC class 'B' approval

Made in U.S.A.

MEMORY CARD

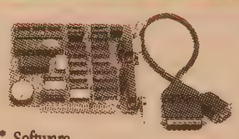


Made in U.S.A.

Club 576 (for PC, Portable)
- Software **$55**
- Short Card
- 0-576K Memory
- Supports 64K/256K DRAM

Made in U.S.A.

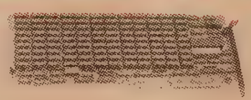
I/O FOR PC/XT/AT



- Software
- Parallel Port
- Half size card **$75**
- Real time clock/calendar
- 2 serial Port (2nd optional)

Made in U.S.A.

MEMORY CARD FOR AT

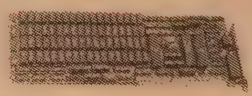


- No Piggy back **Club 3000**
- 0-3 MB capacity
- 64k/256K RAM chips **$155**
- One Year Limited Warranty
- FCC class 'B' approval

Made in U.S.A.

MULTIFUNCTION CARD FOR AT

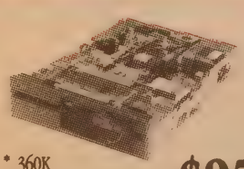
Manager's Choice



- Game port
- 0-2MB Memory
- Runs at 12 MHZ
- 128K Increment range
- 2 Serial port (1 option)
- Self Installing software

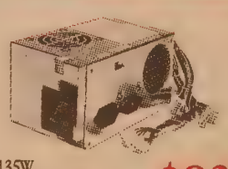
Club 2000 **$179**
12MHZ AT-Multifunction
Made in U.S.A.

FLOPPY DISK DRIVE



- 360K
- Half height **$95**
- TEAC/FUJITSU
- Double density
- IBM grey color extra

XT POWER SUPPLY



- 135W
- Reliable **$83**
- Complies with FCC
- Direct replacement
- One Year Limited Warranty

MOUSE

Microsoft Compatible
Run Microsoft windows

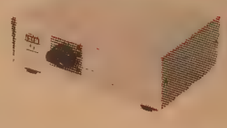
- 200 Dots/inch
- Work with Auto-Cad **$75**
- 3 Buttons/built in Microprocessor

Mouse with DR. HALO **$109**
Ask for Optical Mouse

PRO KEYBOARD

Model no. 5151 **$88**
- Separate Numeric & Curser keypad
- AT Style Keyboard w/LED

SWITCH MASTER

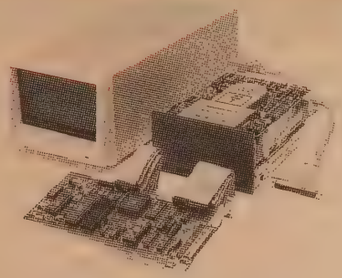


$88
- Cable included
- Share one printer by 4 computer or 1 computer to 4 printer

FAST HARD DISK FOR PC/XT AND COMPATIBLE

Upgrade Your PC/XT
Power Your XT

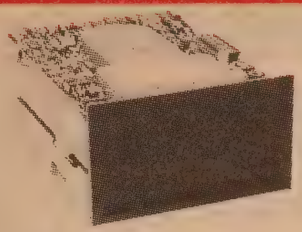
39 ms Access time



* Auto Head Park
* Boot from Hard disk
* Quality Seagate drive
* 39 ms average access time
* Software and Manual included
* Special Western Digital controller

	INTERNAL	EXTERNAL
☐ 20MB Hard Disk Subsystem Seagate 4026	$659	$759
☐ 30MB Hard Disk Subsystem Seagate 4038	$759	$859
☐ 40MB Hard Disk Subsystem Seagate (available now)	$859	$959

FAST HARD DISK DRIVE FOR AT



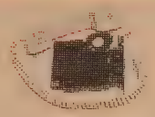
39 ms Access time

* 39 ms access time
* Auto Head Parking
* Linear Voice Coil Activator
* One Year Limited Warranty
* Cables, AT sliding rail and Software included

20MB 4026	$528
30MB 4038	$628
40MB 4051	$699
72MB (23 ms)	$1195
80MB 4096 (28 ms)	$1295

EVEREX MODEM—HAYES COMPATIBLE

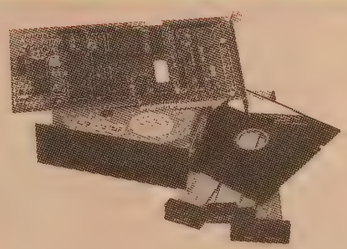
* Half size/Half power
* Excellent for Long Distance calls
* Free Bitcom Communication Software
* One Year Limited Warranty
* FCC class 'B' approval



NEW **EVERCOM 24**
1200/2400 BAUD $249

1200/2400 Baud	300/1200 Baud
CALL	$128

20/30 MB HARD DISK SUBSYSTEM



For PC Upgrade to XT

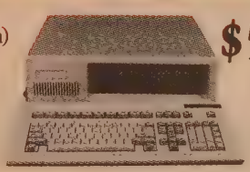
	INTERNAL	EXTERNAL
20MB	$375	$567
30MB	$475	

* 65MS access time
* Boots from Hard Disk
* Western Digital Controller
* Manual, Cables, Hardware and Software included
* 20/30MB Seagate Hard Disk

With Floppy Controller Add $50

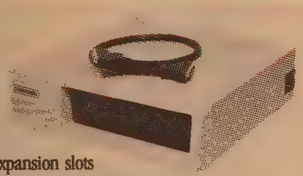
CLUB XT TURBO 4.77/8.0 MHZ

* 360K Floppy Drive
* 135W Power supply
* Color: PC/XT Color
* Electrical: 115V220V
* 8088 CPU, 4.77 MHZ
* Legal Compatible BIOS
* Floppy Disk Controller
* 8087 Math Co-processor (option)
* Dimension: 17.5 x 19 x 6.1
* 640K Memory 765K Standard
* Quanity discounts available



$505

EXPANSION CHASSIS



* 8 expansion slots
* No wait state design
* Round shielded cable
* 4 half height drive space
* Most compatible chassis on the market

$428

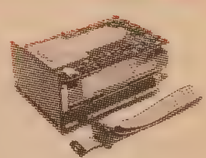
WEEKLY SPECIALS

	Qty. of 2
Toshiba 72MB	$1099
Seagate 4051	$638
Teac Floppy 360K	$85

CHIPS

64K DRAM	256K DRAM
150 ns (9 pcs.) $9	150 ns (9 pcs.) $27
120 ns (9 pcs.) $12	120 ns (9 pcs.) $36
	100 ns (45 pcs.) $45

HIGH CAPACITY



80MB
28 ms Access time
* Manual
* With software

$1295

OTHERS

HARD DISK CONTROLLERS	
* Data Switch Box	$88
* PC/XT controller	$90
* Floppy controller	$49
* 25 Pin Serial Cable	$18
* Split Power Y-cable	$8
* IBM Type Printer Cable	$15
* IBM AT Bus Extended Card (good for test & debug)	$30
* AT HD/Floppy Controller	$170
* Compaq 286 Hard Disk Controller	$188
* PC/XT HD/Floppy Controller	$140

CHIPS	
* EPROM 2764	$6
* EPROM 27128	$8

TAPE	INTERNAL	EXTERNAL
* Teac	$580	$680
* Wangtek	$747	$827

SOFTWARE	
Graphics DR. HALO	$49
Communications BIT-COM	$49

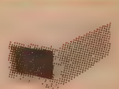
ADD ON	
* Kits for Mini I/O, 2nd Serial Port	$25
* Kits for CLUB 2000, 2nd Serial Port	$25

DEALERS SPECIAL

* Mini I/O	$45
* AT keyboard	$50
* Math Co-processor	CALL
* Two Drive Chassis	$85
* Memory Short card	$40
* AT Power supply 192 watt	$95
* 6/8 MHZ AT-compatible computer	CALL
* AT HD/Floppy Controller (XT size)	$160
* XT HD/Floppy Controller (XT size)	CALL

CHASSIS

$99



* W/Power supply
* Good for 2 drives

HARD DISK/FLOPPY FOR AT

* AT-compatible
* Western Digital Chipset

$170

FREE MEMBERSHIP

The American Success Story

CLUB AT INC.

46707 Fremont Boulevard, Fremont CA 94539
Quality and volumes is Our Business
All Sales CAll **(415) 490-2201**
FAX No. **415-490-2687**

VISA MasterCard AMERICAN EXPRESS

Now Open 7:30 to 6:30 PST
for your convenient

University P.O.'s are welcome
Corporate Buyer call for Neil Mehta

Quantity Discounts are available
Dealers are Welcome

ORDER BY MAIL: Check or Money Order, California add 6.5% Sales Tax

ORDER BY PHONE: C.O.D., Cashier Check, VISA (3%), MasterCard (3%) American Express (4%) or Approved Company P.O..

TERMS: All prices are subject to changes and quantity may be limited and we reserve the Right to Substitute Equivalent Items. Unauthorized Returns are subject to 10% Restocking Fee. Call for RMA Numbers for Returns and Repairs.

IBM, Hercules, Bitcome,Xenix,are Trade Marks of the Respective Companies. Limited Warranty, 1 Year parts and 6 months Labor

The BEST Systems For YOUR Business!

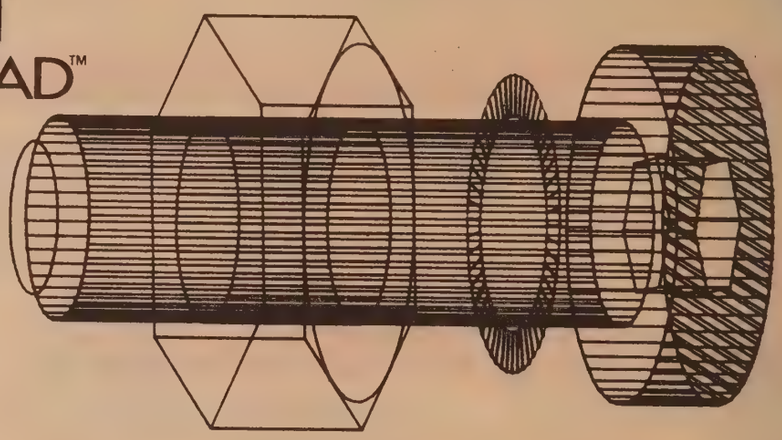
Backed By Orange County's Best Service & Support Network

ANNOUNCING VERSION 2.5

AUTOCAD™

AUTOCAD™ by Autodesk

FOR EVERYTHING YOU DRAW!



NEW FEATURES:

- 30 New Functions
- 10X FASTER on zooming & panning features
- Works with EMS Memory (up to 4 MB)
- IGES File Exchange included
- Upgrades Available
- FASTER Menu Loading on menus of ANY size

DEMOS OF AECADD AVAILABLE

Authorized Dealer for the world's most widely-used PC-Based CAD Software
AutoCAD is a trademark of Autodesk Inc.

NOW OFFERING AUTOCAD™ Applications Catalogue Over 250 Programs that work with AUTOCAD™

Page and document composition software for IBM PC/XT/AT and compatibles.

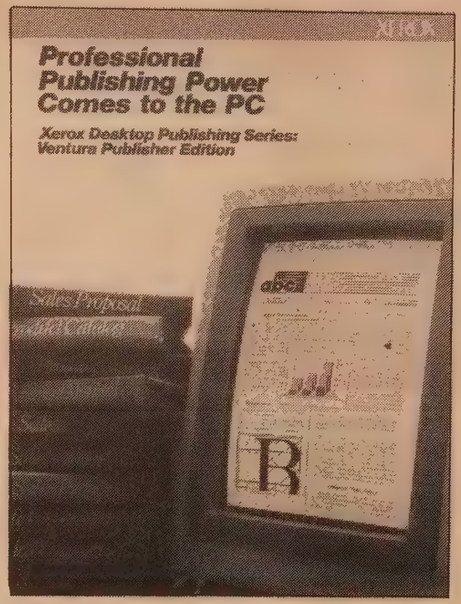
Using Xerox desktop publishing software!

XEROX Authorized Software Dealer

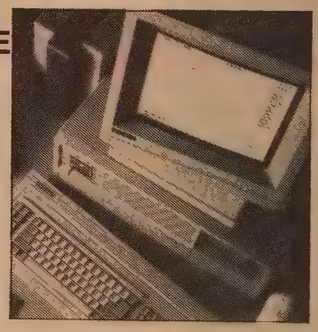
XEROX® is a trademark of XEROX CORPORATION.

- Works with: Microsoft Word, Wordperfect, Wordstar, Autocad, Lotus 1-2-3, Symphony, PC Paintbrush, GEM Paint
- OUTSTANDING capabilities for Document control, Format control, Page control, editing text graphics
- Built-in drawing capability for tables, call outs, forms: includes lines, boxes, circles & caption boxes.
- Full **WYSIWYG** display on standard PC screen

CALL FOR DETAILS



COMPLETE CAD SYSTEM 10 MHz AT Turbo Computer



- 1.2 MB Floppy Disk Drive
- 1 MB RAM
- 20 MB Hard Disk w/Western Digital Controller
- 80287-10 Math Co-processor
- IOLINE LP 3700A-E size plotter
- Graphics card & display
- Your Choice: Digitizer or Mouse
- With: ACAD or smARTWORK
- **TRAINING INCLUDED**

ACCOUNTING SOFTWARE

- General Ledger
- Accts. Payable
- Accts. Receivable
- Inventory
- Purchasing
- Order Entry
- Bill of Materials
- Job Costing/WIP
- Mat'l Req. Planning
- Payroll module
- Report generator

ROGERS PRODUCTS CO., INC.
1010-F N. BATAVIA, ORANGE, CA 92667

HOURS: M-F, 8-5

CALL NOW FOR UP TO THE MINUTE PRICES

(714) 771-0514

RUMORS

■ Abaton Technologies of Pleasanton, CA, who recently introduced sheet fed and flat bed scanners for the Mac and C-Scan software, is planning introductions for the IBM desktop publishing marketplace in March of next year.

■ The expected entry of the Amstrad computer into the US certainly won't be problem-free . . .there's a shortage in the number of entry-level units available, along with product cost increases and problems with the machine's actual compatibility as a PC-clone.

■ And then there's Apple, whose expected/ alleged/ Macintosh product intros continue to attract a great deal of press attention. We've learned of the following:

First, for laser users, Apple is supposed to be bringing out a new low-end laser printer to the marketplace for less than $2,000 . . . but this one won't support PostScript, instead depending upon the QuickDraw routines inherent in Mac software to drive its engine.

Secondly, it's alleged that one of the three new Paris model Macs is the color Mac workstation that could make a dent in Apollo and Sun sales to the engineering and CAD/CAM environments. The engineering workstation will sell for a little less than $7,000.

The standard, basic Paris is the one purportedly known as the open Mac; it'll not only have a keyboard modeled after the IIGS, but a 68020 CPU pumping at 16 MHz and eight expansion slots, all for around $4,000.

A third model will supposedly sport a full-page display and a 40 MB drive for around $5,500.

Yes, there's even more! Look for a supposed new upgrade to the Mac Plus, the Aladdin Mac, which also has the 68020 CPU, two expansion slots and two built-in 800K drives, all for less than $3,000.

Apple will also allegedly be releasing, during the second quarter of '87, brand new, 3½" drives that can store as much as 1.6 MB of data!

■ It is rumored that Apple, anxious for software for the IIGS, is willing to pay incentives of from $25,000 to $100,000 for new offerings that support ProDOS 16, the operating system of the IIGS computer.

■ A Colorado-based developer, Dynamac, has allegedly signed a VAR agreement with Apple to produce a laptop Macintosh which will weigh less than 20 pounds, pack either a 40 or 20 MB hard disk drive, and have as much as 4 MB of RAM. Pricing, depending upon system configuration, will range from around $4,995 to nearly $7,000. Another company, Colby Systems, also intends to bring to market a LAP-MAC, with or without a VAR agreement with Apple.

■ Hayes Microcomputer Products' planned imposition of a two-percent royalty fee on all Hayes-compatible modem products, based on the fact that Hayes was granted a patent in '85, has not met with favor from other vendors. In fact, the "opposition" held a rally during COMDEX and plan to team up to fight the Hayes plan.

■ Now it appears that early 1988 is the fastest we can expect that protected mode MS-DOS 5.0 that mega-giants Microsoft and IBM have been playing around with. If, according to rumor, developers won't be able to utilize kits until late next year, you gotta give them at least six months to come up with something viable for the retailers' shelves...

■ Expect a battle royal as Seattle Computer starts fighting Microsoft for the right to sell MS-DOS licenses. Back in '81, this small company designed and then sold a product called 86-DOS to an equally small Microsoft, which has now challenged Seattle Computer's right to sell operating system licenses.

■ In spite of the fact that The Source dumped nearly $14 million in revenues into the corporate coffers, Reader's Digest is looking to sell its 80 percent share of that videotext service.

■ All was not peaches and cream for some of the vendors at COMDEX Fall. Wholesale Outlet (Albany, NY) felt the wrath of the FCC as United States Marshals swooped down upon its booth and seized several non-certified devices from floor display. The company, already fined $2,000 in the past for such activities, now faces additional prosecution by William Maddox, United States Attorney for the District of Nevada.

EVERCOM 24
Everex for Excellence in Electronics
Evercom 24 modem 300-1200-2400-BAUD $269
Everex Edge Card $259
Everex EGA Enhancer Card $250
Everex 300-1200 Baud modem $121
Everex Multi/I/O Card for AT $65
Everex Excel Stream tape backups CALL
CLEAN POWER CENTER
Surge/Spike Control + EMI/RFI Noise Filter UL approved
$10
LOW, LOW EVERYDAY PRICES ON ACCESSORIES
• 20 MB Seagate Hard Drive w/controller $369
• Mini I/O for AT $65
• Power supplies - 150 Watt $50/200 watt $75
• Cases AT or/Mini-AT deluxe model $65/ea.
XT flip-up and slide case $26
• Swivel monitor base swivels 360° tilts 12.5° up and down $12
• Diskette holders - holds 100 pcs $7/deluxe model w/lock-holds 120 pcs, DOUBLE FILE SYSTEM $10
• 640K motherboard $80/ Turbo 640K motherboard $89
• Color graphic composite card $56
• Monochrome Graphic Printer Card $64
• Multifunction Card $71
• Logimouse $79
TOO MANY OTHER PRODUCTS TO LIST • FULL LINE OF PERIPHERALS AND ACCESSORIES
IMPORTER WHOLESALER
Alinco Industries, Inc.
19121½ Bloomfield Ave., Cerritos (corner of South St.)
Fax (213) 924-1861 TLX 3719654 Alinco
(213) 865-2120

WE PROMISE:
Quality Service
Educated Support
Exceptional Pricing

We at Digitech Research combine our engineering education and experience to offer you the finest in business systems. Our qualified sales and service staff give you total support for the corporate environment.

PC XT Compatible starter system

640K on 4.77 MHz motherboard w/BIOS
2 floppy disk drives
Disk I/O (serial/parallel/game/clock/ calendar/floppy controller)
150W power supply
5150 keyboard
Chassis
Monochrome graphics adapter
Monochrome TTL monitor

$666

PC XT Compatible Professional System

640K on 4.77 MHz motherboard w/BIOS
1 floppy disk drive
1 20 MB Seagate hard disk drive
Disk I/O (serial/parallel/game/clock/ calendar/floppy controller)
150 W power supply
5150 keyboard
Chassis
Monochrome graphics adapter
Monochrome TTL monitor

$999

PC AT Compatible System

640K on 6/10 MHz Motherboard w/BIOS
1.2 MB Floppy disk drive
Floppy and hard disk controller
200W power supply
AT Keyboard
Chassis
Monochrome graphics adapter
Monochrome TTL Monitor

$1199

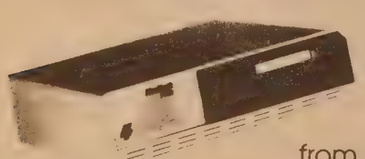
DIGITECH RESEARCH

(213) 720-1461
(213) 720-1470

2260 S. Atlantic #F
Monterey Park, CA 91754
(at back of Atlantic Square)
Dealer inquiry welcome

MACBACK PLUS SCSI TAPEDRIVES FOR THE MAC

Get Speed, Reliability, and Flexibility with our MACBACK+ SCSI tape back up system. Backs-up Mac hard disk drive or, over the Appletalk network. Backs-up by file, folder, volume or incremental mode.



Call for the dealer nearest you.

415-657-2211

from **PERIPHERAL LAND** THE SCSI EXPERTS

Datacopy Develops PreScript

Datacopy Corp. (Mountain View, CA) is completing development of a high level programming language called PreScript, designed to perform complex image processing functions through calls from office automation application programs.

DEST Licensing Agreements

DEST Corp. (Milpitas, CA) has signed licensing agreements with 15 desktop publishing software vendors: MicroPro International, G.O. Graphics Inc., Archetype, Inc., IMSI Corp., Studio Software Inc., Software Channels Inc., Manhattan Graphics Software Inc., Megahaus Software Inc., Award Software Inc., Software Publishing Corp., PS Publishing, Boston Software Publishers, AGE Corp., and Aldus Corp.

DSC Acquires Nestar

DSC Communications Corp. (Plano, TX) has acquired Nestar Systems, Inc. (Mountain View, CA). Charles J. Hart will continue as the company's president and CEO.

PAGEmaster Incorporates GammaFax

GammaFax from GammaLink (Palo Alto, CA) will now be an optional feature for Advanced Vision Research's PAGEmaster desktop publishing system. GammaFax allows IBM micro users to send documents directly from their PCs, via telephone lines, to any digital facsimile device.

Computers For Hospitalized Kids

Hi-Tech Expressions (Coconut Grove, FL) has announced a national project for children's hospitals, designed to foster communication between hospitalized children and their friends and family, using Hi Tech Expressions software and Atari computers. Ten major children's hospitals will each receive three Atari 800XL computer systems and Hi Tech Expressions software and paper supplies. Atari has donated thirty systems.

Insight Signs European Agreement

Insight Development (Moraga, CA) has signed The Professional Connection (London, England), as the master distributor in Europe for the LaserControl line of laser printer utility software. Insight has also received a contract from The Laser Connection, a division of QMS Corp. (Mobile, AL), under which the company will supply a version of LaserControl to be offered on the QMS Kiss and Big Kiss laser printer products.

Microlytics Bundling Agreement

Microlytics, Inc. (East Rochester, NY) has announced that MicroPro International Corp. (San Rafael, CA) will be bundling Microlytics' *Word Finder* electronic thesaurus with its *WordStar Professional* during a special marketing program. In addition, Microsoft will be bundling *Word Finder* with its Microsoft *Word*, v3.1 word processing program.

New Mindscape Division

Mindscape Inc. (Northbrook, IL) has formed a new division called Thunder Mountain, with each software title carrying the same suggested retail price of $9.95. First in the lineup is *Rambo: First Blood Part II*, an action graphics program.

Newsnet News From China

NewsNet (Bryn Mawr, PA) has expanded its international news coverage with the recent addition

FOR THE BOTTOM LINE IN PRICING
CALL MICRO 2000

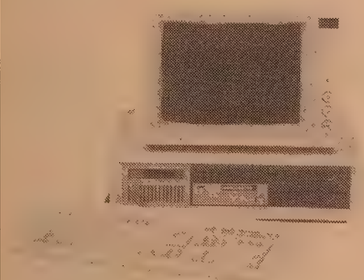
This is not just a headline
We really beat anyone's price

Everything you'll need to complete your office/home with a complete package.

LEADING EDGE MODEL "D"
- 1DR • 30MB HARD DRIVE
- MONOCHROME DISPLAY
- 640K RAM
- C ITOH DOT MATRIX PRINTER
- MS DOS 3.1
- WORD PROCESSING SOFTWARE
- TWIN-SOFT

Call for best price

SUPERCOM XT TURBO



- (5MHZ & 8MHZ)
- 2 DRIVE
- 20MB
- TTL MONO MONITOR
- MONOCHROME GRAPHIC CARD
- AT STYLE KEYBOARD
- 150 WATT POWER SUPPLY

$1050

MULTITECH DUAL MODE ACCEL 900 AT

- 30MB HARD HI SPEED DRIVE
- 512K RAM
- 1.2MB FLOPPY
- SOFTWHITE DISPLAY

Call for our low price

****Now Available Multitech 700**

OUR EVERYDAY LOW PRICES

TAXAN 760 w/TAXAN AUTO SWITCH EGA	$820
PARADISE AUTO SWITCH EGA	LOW PRICE
LEADING EDGE MODEMS 1200B/2400B	125/235
PLUS HARDGARD 10MB/20MB	470/670
PRINCETON MONITORS FULL LINE	LOW PRICES
AMPEK 310A	154
TOSHIBA 1100 Plus in stock	CALL
TOSHIBA 3100	Call for lowest price
Compaq Portable 1Dr/640k/20MB	2150
Compaq Deskpro 2Dr/640k/20MB	2270
IBM XT NEW 20MB/640k/1dr	2070
IBM AT Basic	2230
IBM AT 30MB/ 512k/1.2MB floppy	2890
IBM AT 339 (NEW)	LOW PRICE — CALL
NEC Multisync Monitor	570
Sunadd Tri-mode Color Graphic	300
Epson Printers All Models	LOW
C. ITOH Printers Authorized	LOW
IBM Proprinter/XL	390/565
Toshiba Printers	BEST PRICES
COMPAQ 386	IN STOCK
Call for lowest price	

While You Wait Installations

Seagate Hard Disk Sale 20MB	$399
Seagate Hard Disk Sale 30MB	480

Never be nervous about a breakdown.
We carry Microguard, the worry-free breakdown protection program. Microguard covers the cost of all repairs to your system for three years.

Authorized MICROGUARD℠ *Dealer*

MICRO 2000 INT'L

Federally licensed service technician on duty Monday thru Saturday. We offer MICROGUARD service contracts and Corporate discounts. Complete line of Sony diskettes/Printer cables/ 150 watt supplies for PC's. **We carry all brands of printers FREE Printer cable with purchase of printer**

MICRO 2000
INTERNATIONAL

CALL FOR QUICK QUOTES
(213)
659-5723
941 N. La Cienga
(1 Blk. south of Santa Monica)
Los Angeles
Hours: Mon.–Fri. 9–6
Saturday 10–5

of Xinhua English Language News Service from the People's Republic of China. This coverage is provided by Xinhua News Agency, the national news agency of the PRC.

Read-Write Device From Optotech

Optotech, Inc. (Colorado Springs, CO) has announced a read-write device driver that enables off-the-shelf and custom PC-DOS software to use Optotech's write-once optical disk drive without modification. The device driver will be available in the first quarter of 1987.

NEW PRODUCTS

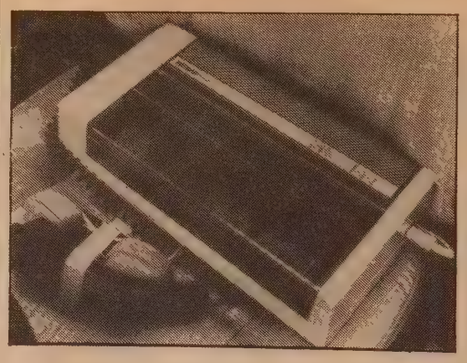
RECREATIONAL/EDUCATIONAL

Games From Activision

Activision, Inc., has finally released *Portal: A Computer Novel*, which takes the player to the year 2106. Having returned from an aborted 100-year voyage to find a peaceful but people-less world, the player delves into Worldnet databases to scan the records of the vanished civilization. Slowly, the thread of the story begins to unravel as the game's interaction revives the sole survivor of the lost world: a biological computer named Homer. The game's massive database requires that it be released on multiple disks for all systems. ($39.95)

Activision has also brought *Aliens: The Computer Game* to the C64/128 computer. Simulating the movie's struggle against mankind's ultimate foe, this offering features six game segments that tie closely to the movie's storyline and action, permitting the player to experience every scene from navigating the drop-ship to combating the alien queen. ($34.95)

Another release is a software program that allows you to quickly design and script cards, invitation and announcements for any occasion.



Port-A-Fax

Medbar Enterprises Inc. (212/986-6668) has introduced Port-A-Fax, a 7-1/2 pound facsimile machine that can be used with home phones, car and pay phones, and on any type of business system. It's powered by internal, rechargeable NiCad batteries. Compatible with all Group II and III facsimile machines, the Medbar fax uses a high-quality acoustic coupler secured with a durable elastic strap that attaches quickly to any telephone headset, with no electrical connections required. Port-A-Fax receives pages on 8.2 inches by 11.6 inch sheets of electro-sensitive paper and comes with a battery charger.($1,495)

The Greeting Card Maker personalizes and prints in color or black and white, and includes six different size cards, scores of pictures, two dozen background patterns and borders, eight type styles in both upper and lower case, and a wide variety of verses. There's also an envelope maker and address book included. ($34.95 for C64/128)

New From Electronic Arts

Electronic Arts (415/571-7171) has announced that its award-winning conquer-the-world strategy game, *Lords Of Conquest*, is now available for Apple II computers. A single player may play against the computer or up to three other players. Players may also use the program's built-in maps as they are, modify them, or design their own game map with the game's map generator. ($39.95)

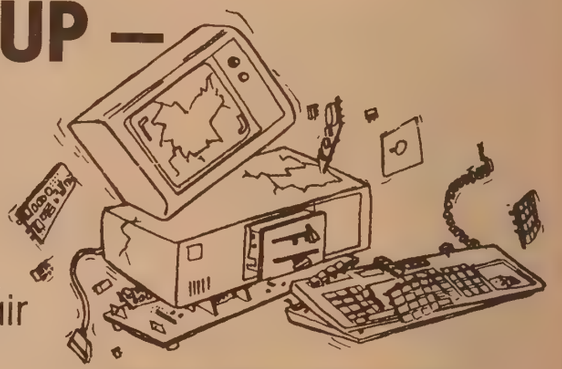
Moebius—The Orb of Celestial Harmony, a fantasy role playing game published by Origin Systems (the creators of the famous *Ultima* series) has also been released by Electronic Arts for the Commodore 64/128. *Moebius* takes the role-playing adventure into a martial arts environment, with 3-D graphics and vivid portrayals of karate and sword-fighting sequences. This adventure begins in a colorful and complex Oriental world of intrigue, mysticism and magic. There's also two-way communication with townspeople. ($39.95)

EA has also introduced *Radio Baseball*, a new sports simulation that puts the player into the role as manager of a baseball team. The player manages against a friend, or against Abner, the computerized manager, with a "broadcast" description colorfully depicting every game action. Success in winning depends upon how well you manage each player on your team. ($39.95)

Mike Edwards' *Realm Of Impossibility* is also now available for the Apple II family. Using a

Q: When your computer BLOWS UP — What do you need?

A: The Intelligent Solution



We combine over 15 years of experience to give you the highest caliber of service and repair

ON SITE for home or business

DON'T WAIT 'TIL IT'S BROKEN TO CALL US!

2 CONVENIENT LOCATIONS

LONG BEACH - COSTA MESA

FREE GET ACQUAINTED SPECIAL FREE

Bring your computer in for a
FREE Diagnostic check-up
FREE Pack of diskettes

Offer good with this ad until 1/31/87

FINANCING AVAILABLE

Looking for a compatible system?

It makes sense to buy it from a qualified retailer who can service as well as sell

COMPLETE SYSTEMS W/MONITOR
640K Turbo from $799
or $33 per month

NO RISK OFFER
10 days money back guarantee
1 year parts and labor warranty

5547 East 7th Street
LONG BEACH
(213) 494-6999

INTELLIGENT SOLUTIONS

GRAND OPENING

2075 Newport Blvd.
#104 COSTA MESA
(714) 631-6999

Why Repair

When You Can Upgrade For Less

Is your system getting obsolete?

Do you need to standardize your collection of machines?

Do you need more performance from your current system?

We offer solutions for a variety of business problems.

Upgrades from $69 depending on existing equipment and future needs.
2 year 3rd party warranty available on upgrades and systems.

LET'S TALK ABOUT **YOUR** NEEDS

COMPLETE SYSTEMS

286 Compatible System

- 1 MEG MEMORY
- Enhanced Keyboard
- 200 Watt power supply
- Hard disk/floppy controller
- Monographic card and monitor
- DOS 3.1
- 6/10 MHZ motherboard
- 1.2 MB floppy

$1495

PLUS 32 MEG FAST HARD DISK **$1995**

High Performance Turbo

Runs Norton SI - 4.1 This V-20 based machine is the fastest XT compatible on the market to date. If you like speed but don't care to spend mega bucks for quality, then this screamer is the ideal, low cost, high performance system for you.

- 640K memory
- 360K floppy drive & controller
- 150 Watt power supply
- 4.77/8MHz clock speed, NEC V-20
- AT style keyboard
- Monographic card & monitor
- DOS 3.1

$795

Plus 30 MEG Hard-disk **$1295**

All systems thoroughly tested before shipping.

NETWORKING SOLUTIONS for SMALL BUSINESSES

We will evaluate your needs and utilize your existing machines wherever possible, as well as upgrading for maximum performance.

Super Special Saving

FACSIMILE MACHINE **$1295**
32MB CMI hard disk **$495**
Full line of Seagate drives . . . . **CALL FOR LATEST PRICE**
Public Domain Software **$3/disk**

Cashiers Check, Money Orders, American Express add 3%

NORRELL CORP

2545 W. 237th St., Suite G, Torrance, CA 90505 (213) 326-7210

trusty joystick, the solitaire player must search through a vast complex of 13 dungeons for the seven crowns of the middle kingdoms. In truest dungeon tradition, each murky level contains its own dangers and oddly-shaped creatures to be faced—as well as the occasional spell, scroll or key to help you along. ($14.95)

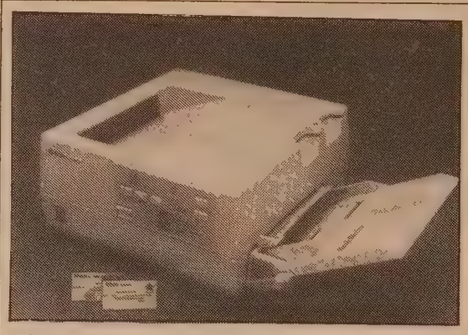
The company has also released *Exodus: Ultima III*, the epic, fantasy role-playing masterpiece, in versions for both the Atari ST and the Commodore Amiga computers. This latest offering is designed to take advantage of the superior graphics and sound capabilities of both machines; it features a newly incorporated window system providing improved ease of play. Designed by Lord British and Origin Systems, over 26 monsters await to test your mettle. ($59.95)

More From Epyx

Epyx (Redwood City, CA) has released *Championship Wrestling* for the Apple II and Atari ST. This game features eight distinctive wrestling personalities. Players choose which personality they want to be, and then play alone, against the computer, or against up to seven other players in an effort to win the most coveted prize of Championship Wrestling: the World Wrestling Belt. There are 25 classic wrestling moves, from body slams to flying dropkicks to headlocks to airplane spins and then some. There is also a "Have A Ball On Us" promotion which offers consumers a free Wilson football, basketball or soccer ball when they send in proof-of-purchase and dated sales receipts for the three EPYX sports games.

Epyx has also released the motorcycle racing game *Super Cycle* for Atari ST computers. This offering puts players behind the handlebars of 750 ccs of screaming chrome and pistons and provides gaming action that's very realistic. The game requires split-second decisions and nerves of steel to beat the clock and be successful. Day and night countryside scenes and city skylines fly by as players race to victory and even greater challenges at higher levels of difficulty.

Also debuting from Epyx is the ST version of *World Games*. Players travel around the world to compete in eight international sporting events: diving off the Acapulco cliffs, barrel jumping in Germany, sumo wrestling in Japan, log rolling in Canada, racing in a giant slalom race in France, weightlifting in Russia, and the Caber Toss in Scotland.



The GQ-3500 is a new, efficient laser printer from Epson.

Epson GQ-3500

Epson (213/539-9140) has debuted the GQ-3500, a laser printer designed to compete with the Hewlett Packard LaserJet Plus. The printer comes with 640K of memory that can handle a full range of text and graphics functions. The more compact machine utilizes a second generation laser engine and has a very fast warmup time of 45 seconds. The first page prints in between 22 and 25 seconds, with an overall speed of 6 ppm. The GQ-3500 has two built-in, user accessible IC card slots located on the right side of the machine, which allows users to select the printer's emulation mode. The printer comes standard with a parallel printer interface. ($2,495)

GFL Championship

Gamestar (division of Activision, Inc.) has released *GFL Championship Football*, a complete football simulation for major home computer systems. This simulation puts players down on the field, providing them with a ground-level, in-the-helmet perspective. Not only are players on the field, but scrolling screen animation gives players the feeling of actually moving up and down the field while engaging in any of the 34 offensive plays, 12 defensive alignments, kick-offs, field goals and punts. Players can select their team's playing style, then compete against a friend or any of the 27 separate computer-controlled GFL opponents. ($39.95) Atari ST and Amiga versions will debut early in January '87.

Computer Laptop Chess

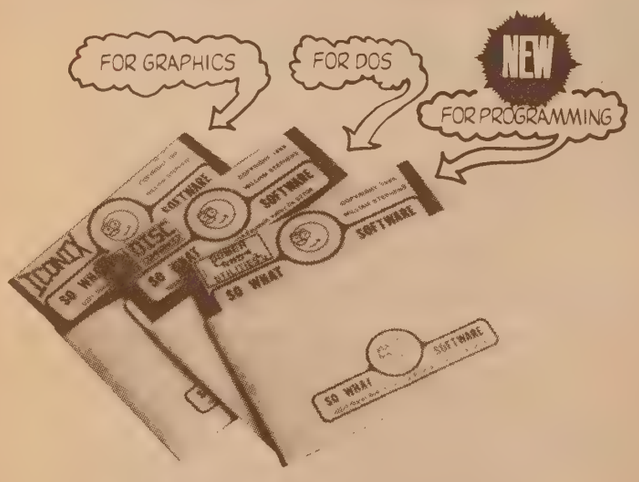
Mindscape Inc. (312/480-7667) has introduced *Computer Laptop Chess*. The program sports plenty of features to please the chess addict, including 16 levels of play, a large library of book openings, the ability to save games in progress, and easy-to-use move entry. *Computer Laptop Chess* will be available this month for Toshiba, NEC, IBM PC Convertible, Zenith, and other MS-DOS machines. ($39.95)

Might And Magic

New World Computing, Inc. (800/443-1888) will soon be releasing *Might And Magic, Book One:*

So What Software Presents . . . . . .

MORE BANG FOR THE BUCK



3 Gigantic utility packages for your Apple II series computers, self documenting and unprotected!

for dos ☐ Disc Commander _____ $19.95
for graphics ☐ Iconix _____ $19.95
for programming ☐ Power & Utilities _____ $19.95 NEW!
for free ☐ FREE catalog _____ $00.00

$1.50 SHIP & HANDLE FOREIGN-ADD $2.50 CA 6%

SO WHAT SOFTWARE, 10221 SLATER AVE., SUITE 103, FOUNTAIN VALLEY, CA 92708

Apple is a registered trademark of Apple Computer Inc

ICONIX HI-RES/LO-RES GRAPHICS/TEXT AND ANIMATION EDITOR

• Utilize a triple mode, magnification and panning PIXEL EDITOR to edit any hi-res screen • Lassoe and COMPILE icons from any hi-res screen • OVERLAY icons anywhere on any hi-res screen • Create ARCADE ANIMATION from your programs with relocatable machine code modules • Synthesize shifted raster scan shapes • Move icons without destroying the background • Create bload-able text and lo-res graphics screens with SCREDIT • also the ever popular 4 HANDY DANDY WIPES.

DISK COMMANDER DISK EDITING SYSTEM

• 4 Editors • 13 Sub-editors • Completely menu driven • 1 or 2 drive operation • INSTRUCTORIALS and TECHNICAL INFORMATION on disk • Sort Catalog entries • Hide catalog entries • Create multiple heading catalogs • Reassign lock/unlock and file type symbols, spaces, columns, catalog heading and program titles to any combination of NORMAL, FLASH, INVERSE, LOWER CASE or CONTROL characters • Rename all DOS commands • Rewrite all DOS error messages • Make a (non-VTOC dependent) disk map showing the TRACK SECTOR LISTS, VTOC and CATALOG TRACK/SECTORS • Trace out individual files • Change the HELLO program • Change any byte anywhere on a disk. • Make instruction, disk maps, track/sector displays and traces using your printer, and much, much more.

POWER AND UTILITIES UTILITIES AND ENHANCEMENT

PROTECT and DE-PROTECT your own disks (foils most copy programs) • Create sound effects and music with a modular editor • Put unnumbered titles and headings in your APPLESOFT program listings • Add a disk map, free sectors indicator and a filetype sort to the normal CATALOG command • Add a power list command which displays APPLESOFT listings in normal, continuous line or statement per line format showing the control characters • Convert DECIMAL to HEX to BINARY in any combination or size. Relocate applesoft programs to run at any address • Also included is a group of memory map files showing you virtually all there is in an APPLE • Ampersand(&) Utilities.

AND MUCH MUCH MORE

SO WHAT SOFTWARE

10221 Slater Ave. Suite 103 Fountain Valley,Ca.92708

STEP INTO THE WORLD OF

SOFTWARE SAVINGS!

Data Base

DBase III+	$409.00
Cornerstone	299.00
Reflex	79.80
Nutshell	95.00
RBASE System V	CALL

Wordprocessing Software

Multimate/Advantage	$219/299
MS Word	289.60
Wordperfect 4.2	209.00
Wordstar 2000/2000+	239/289
Leading Edge	69.00

Accounting Software

Accounting Partner	CALL
Peachtree Back to Basics Accounting	$219
BPI (all modules)	CALL
Computer Associates (all modules)	CALL
Open systems GL/AR/AP/PR/INV	419

Utilities

Norton 9.1	$59.95
Turbo Lightning	54.80
Thinktank 1-1	95.00
Clipper	327.98
Quick Report	145.00
X-TREE	32.00
COPY II PC	25.00

Simon & Schuster

Typing Tutor III	42.97
Webster Spelling Checker	49.97
Webster Thesaurus	59.45
Fastback	98.00
Microsoft Windows	58.00
Microsoft Macro Assembler	CALL
Fortran Compiler	CALL
Quick Basic	CALL
C Compiler	CALL

Borland

Borland Turbo Lightning	$56.95
Turbo Pascal 3.0	39.95
Sidekick (non-protected)	47.95
Super Key	39.95
Turbo Pascal 8087 bed.	59.95
Travelling sidekick	34.95

Decision Resource Graphics

Chart Master	229.00
Diagram Master	199.95
Map Master	239.95
Sign Master	149.95

Communications

Smart Com II	95.00
Carbon Copy	105.00
Crosstalk XVI	CALL
Remote 1-3	CALL

Project Management

Harvard Project Manager	269.00
Super Project Plus	275.00

Integrated

Enable	$339.00
Framework II	395.00
Lotus 123	305.00
Symphony	429.00
Supercale 3	199.00
Multi-plan	123.00
VP Planner	49.95

Good Software Real Estate

Amortizer III	75.65
Depreciation	335.75
Investor III	211.65
Property Management	335.75

Games & Educational

Balance of Power	29.97
F-15 Strike Eagle	20.97
Gato	23.97
Hacker II	23.97
Superbowl Sunday	20.97
Karateka	20.97
Baseball (Micro League)	23.97
Orbiter	20.97
Sargon III	29.97
Trinity	23.97
Winter Games	23.97
Silent Service	20.97
The Newsroom	35.97
Kidwriter	23.97
Printmaster Plus	35.97
Type	29.97
VP Planner	59.97
Success w/Math	17.97
My ABC's	11.97
At Spelling	29.97
Bankstreet Writer	47.97
At Spanish	11.97
Certificate Maker	35.97
Reader Rabbit	23.97

Operating Systems

Microsoft DOS 3.2 w/Basic	$89
IBM DOS 3.1	67
IBM DOS 3.2	78
Compaq DOS 3.1	59

We Carry Software For the Following Computers

Commodore	CPM 86	NEC
IBM	DEC	NEC 3
Apple	DEC CPM	WANG
Macintosh	KAYPRO	MS DOS
Amiga	KAYPRO	
CPM 80	TI Professional	

CALL FOR TITLES AND PRICING

SPECIALIZED SOFTWARE FOR YOUR BUSINESS

Construction	Gas Station
Church	Mail Order
Agriculture	Medical
Clothing	Manufacturing
Dental	Oil Well Mang.
Engineering	Retail
Legal	Restaurant
Hotel	Video
Garage	Service

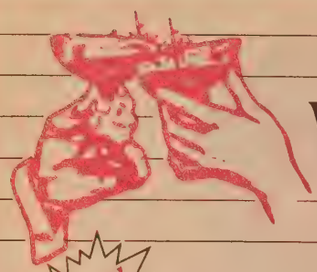
CALL FOR PRICES

Software World

(213) 618-8864

20655 S. Western #104
Torrance, CA 90501

We've Moved



WE WISH EVERYONE A HAPPY

NEW

ITT AT Compatible

- 80286
- 8/10 MHz switchable
- 512K Standard RAM expandable to 1 MEG
- 1.2 MEG floppy disk drive
- EGA switchable display card
- 8 Expansion slots
- AT-style keyboard
- serial/parallel/clock/calendar
- 1 year warranty

$1795

Toshiba Portable Personal Computers

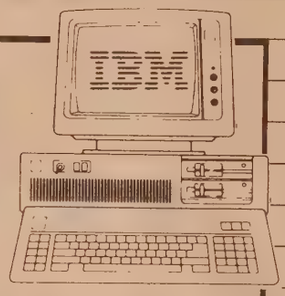
T1100 PLUS $1695
T3100 $3495

External 5¼" drive $450
300/1200 Baud modem card $350
384K Internal memory upgrade $450
OTHER OPTIONS AVAILABLE

IN STOCK NOW

IBM PC 2 dr., 256K $995
NEW IBM XT 1 dr., 256K $1550
NEW IBM XT 089 Enhanced $2150
IBM Convertible 2 dr., 256K $1425
IBM AT 068 (6 MHz) $2295
NEW IBM AT 339 (8 MHz) $3995

We will custom build any system to your specifications

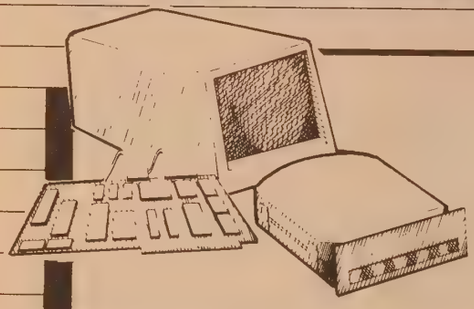


COMPAQ

Deskpro-Portable-Portable II-286-386

Deskpro 286 model 1 $2100
Deskpro 386 model 40 $4895
ALL CONFIGURATIONS AVAILABLE

CALL FOR BEST PRICE



Hard Disks & Drives

20 MEG HARD CARD $550
TEAC 360 K DS/DD 85
Toshiba 360K DS/DD 85
Fujitsu 360K DS/DD 75
Seagate 225 - 20 MB H/H w/WD controller 349
Seagate 238 - 30 MB H/H w/Adaptec controller card 429
Seagate 4026 20 MEG 495
Seagate 4038 30 MEG 575
Seagate 4051 40 MEG 725
Seagate 4096 80 MEG 1400
FUJI 20 MEG w/controller (3½" technology low-power)
20 MEG 395
30 MEG 450

All tape backup units including Irwin, Teac, Archive

CALL FOR LATEST PRICE

Monitors

Princeton Graphic Monitors ..... CALL
TAXAN 640 525
TAXAN 630 450
TAXAN 620 395
IBM Monochrome 229
IBM Color 549
COMPAQ DUAL MODE 229
NEC Multi-sync 579
Sony KB-1311 CR (combination TV & RGB 640x200 monitor) 450
Casper color monitor—green/amber switch 325
Casper mono monitor w/tilt-swivel base 89
Magnavox monochrome 95
Magnavox color monitor 295
Nanao TTL softwhite 129
Nanao RGB 640 x 400 w/card 695
Nanao EGA 495

Modems

Hayes 1200B w/software 359
Hayes 1200 389
Hayes Compatible internal 1200 Baud modem w/software 129
Hayes compatible 1200 Baud external 125
US Robotics 2400B external 395
Mercury Com internal 2400 Baud Hayes Compatible w/software 295

NEW

The Canon A-1 Laser Beam Printer

8 pages per minute
300 X 300 BPI
list $3000

$1995

Printers

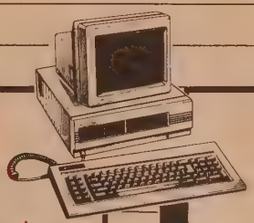
Toshiba P 321 ..... $475
Toshiba P 351 950
CITIZEN MSP 10 275
CITIZEN MSP 15 385
CITIZEN MSP 20 395
CITIZEN Premier 35
EPSON F85 ..... See Specials
EPSON FX 286 ..... See Specials
EPSON LQ800 ..... See Specials
EPSON LQ1000 ..... See Specials
EPSON EX Series ..... See Specials
BROTHER Printers ..... CALL
OKIDATA 292 enhanced 545L
OKIDATA 293 enhanced 695
OKIDATA 294 1095
DIABLO D25 525
HP Laserjet/Laserjet Plus (256K Ram installed) case w/speaker 2195/2950
6' PARALLEL PRINTER CABLE 9

TOO MANY PRODUCTS TO LIST.
CALL FOR FULL LINE AND PRICES.
Corporate & Dealer Accounts Welcome.

We Service & Support Everything We Sell 100%.
Training Available Upon Request LEASING AVAILABLE

IBM • Compaq • Leading Edge • Epson • AT&T • are trademarks of their respective companies. All unauthorized returns are subject to a 25% restocking fee.

AND PROSPEROUS NEW YEAR!



TURBO XT $495

- 640K Turbo motherboard (256K, RAM Installed)
- 360K drive
- Color graphic or mono graphic card
- 5150 keyboard
- floppy disk controller
- Case with speaker
- 150W Power supply
- 90 day warranty
- FCC & UL approved

FULLY ASSEMBLED AND TESTED

AT COMPATIBLES

512K, 1.2 MEG floppy $1395
1 MEG K, 1 1.2 floppy & 30MEG Hard Drive .. $2095

512K standard memory expandable to 1 MEG, 4-layer 8 MHz motherboard, serial/parallel ports, case, 200W power supply, AT style keyboard, floppy/hard disk controller, enhanced graphics adapter (EGA, CGA, HGC). System is FCC approved and comes with a 1 year warranty.

Blow-Out Pricing

EPSON

Equity I *Equity II* *Equity III*

ALL CONFIGURATIONS AVAILABLE

CALL FOR BEST PRICE

PC 6300

AT&T Information Systems

640K, 360 K floppy, 20 MEG hard drive monochrome monitor, software $1850

640K, 1 drive ... $1495
640K, 30 MEG 1950

CARDS

AST 6-Pak+ w/64K	$155	Sigma 400 L or H	419	Intel Above Board AT w/128K	369
AST 6-pak premium w/512K	369	SIGMA EGA	369	Zuckerboard monographics	89
AST Advantage w/128K	350	Paradise EGA compatible	195	Zuckerboard color/graphics	89
Hercules Color/Graphics	155	Quadram EGA+	369	Video 7 Vega EGA+	369
Hercules Mono/Graphics	195	Intel 8087/80287	CALL	Multifunction card (6) w/384K	150
Paradise EGA auto switch	369	Intel Above Board PC w/64K	259	Floppy disk controller	49
				Mini I/O Card	75
				Multi I/O Card with floppy controller	85

JANUARY SPECIALS

EPSON PRINTERS

FX 85	$365
FX 286	479
LQ 800	535
LQ 1000	719
LQ 2500	1075
EX 800	495
EX 1000	689

Software World

(213) 618-8864

20655 S. Western #104
Torrance, CA 90501

CURE FOR THE COMMON CLONE

CTP 1

"Basic System"

- 640K On Motherboard
- Phoenix BIOS
- Seasonic 150 Watt Heavy Duty Power Supply
- Standard Color Graphic Card or Opt. Mono Card
- AT Keyboard
- One (1) Toshiba 360K DS/DD Floppy Drive w/controller
- Fully Assembled & Tested
- 1 Year Warranty

CTP 2

"The Twin System"

- 640K On Motherboard
- Phoenix BIOS
- Seasonic 150 Watt Heavy Duty Power Supply
- Standard Color Graphic Card or Opt. Mono Card
- PC/AT Switchable Keyboard
- Two (2) Toshiba 360K DS/DD Floppy Drives
- Diamond Flower Multi I/O Card w/floppy controller
- Fully Assembled & Tested
- 1 Year Warranty

CTP 3

"Turbo System"

- 210% Faster Than PC
- 8088-2 CPU
- 640K On Motherboard
- 4 Layer Board w/PHOENIX Turbo BIOS
- 4.77/10 MHz Switchable by either keyboard or turbo switch
- Seasonic 150 Watt Heavy Duty Power Supply
- Standard Color Graphic Card or Opt. Mono Card
- PC/AT Switchable Keyboard
- Two (2) Toshiba 360K DS/DD Floppy Drives
- Diamond Flower Multi I/O Card w/floppy controller
- Fully Assembled and Tested
- 1 Year Waranty

CTP 4

"The Turbo HD System"

- 210% Faster Than PC
- 8088-2 CPU
- 640K On Motherboard
- 4 Layer Board w/PHOENIX Turbo BIOS
- 4.77/10 MHz Switchable by either keyboard or turbo switch
- Seasonic 150 Watt Heavy Duty Power Supply
- Standard Color Graphic Card or Opt. Mono Card
- PC/AT Switchable Keyboard
- One (1) Toshiba 360K DS/DD Floppy Drive
- Seagate 20MB Hard Drive w/Western Digital controller
- Diamond Flower Multi I/O Card w/floppy controller
- Fully Assembled & Tested
- 1 Year Warranty

Introducing The COMTEX COMPUTERS

FCC Class "B" Approval Applied For

NOW, for the first time in the United States, we PROUDLY introduce the **COMTEX** family of enhanced personal computers. Proven through actual use for over three years in Canada, these **STATE-OF-THE-ART** systems are the **LATEST** in computer technology.

All our computers offer you a lot more standard features than the IBM PC or XT computers, and outperform other compatibles at least 2 to 1.

In addition, we offer you MORE SYSTEM ENHANCEMENTS than any other manufacturer. This gives you more versatility and flexibility than the IBM and most other compatibles.

With 8 expansion slots and a 150 Watt HEAVY DUTY power supply as STANDARD, we give you MORE ROOM for add ons. All our computers come with the **PHOENIX BIOS** as standard, as well.

AND, because we are so confident of our designs and quality control, ALL COMTEX personal computers come with a **FULL ONE YEAR WARRANTY** on parts and service.

Simply stated, in terms of PERFORMANCE, the COMTEX family of enhanced personal computers gives you the **MOST** computing **POWER** for the value. It's the "**CURE FOR THE COMMON CLONE!**"

COMTEX
MICROSYSTEMS
519 San Vicente Blvd. Santa Monica, CA 90402

CALL FOR THE NAME OF THE DEALER NEAREST YOU

(213) 394-3580

Secret of the Inner Sanctum. This is the first offering in a series of innovative fantasy role-playing games that offer a complete world to explore, with hundreds of special events and encounters. There's a 18″×12″ color fold-out map of the Land of Varn, a quick reference chart for the 94 castable spells. Contained on two disks, this offering is for Apple II computers including the IIGS. ($54.95)

SSI's Games

Strategic Simulations Inc. (415/964-1353) has released two new Macintosh game conversions—*North Atlantic '86* and *Computer Ambush*. The former is a massively scaled land-sea-air simulation of a hypothetical Soviet-NATO confrontation, while the latter finds the players in command of American or German soldiers in squad-versus-squad combat in France during WWII. ($59.95 each)

Strategic Simulations has also released *Warship*, its newest wargame. The Pensacola, Exeter, Kirishima and practically every other warship that fought in the Pacific from 1941 to 1945 are included in this game by Gary Grigsby. Players can select from 79 classes of warships from the Allied or Japanese fleet, or modify ship data to create their own battlships. Four scenarios are included (three historical, one hypothetical). Players can also depart from the provided scenarios and devise original maps to create any possible ship to ship tactical combat. ($59.95 for Atari 8-bit systems)

Also introduced is *Gemstone Healer*, the sequel to the bestselling fantasy game *Gemstone Warrior*. *Gemstone Healer* takes players back to a fantasy world of magic and intrigue where resourcefulness, cunning, and weapons such as swords, crossbow, fireballs and magic combine to help the player meet and conquer a horde of deadly monsters. The warrior must locate the Healing Tools in the Demon's Lair to restore the Gemstone. ($29.95 for C64/128)

ST/Amiga Flight Simulator II

SubLOGIC Corp. (217/359-8482) has introduced *Flight Simulator II* for the Atari ST and Commodore Amiga computers. You can take a trip from Boston to New York in a Cessna 182 single-engine aircraft, or zip down the coast at 500 miles per hour in a Gates Learjet 25G. High speed 3D graphics provide a spectacular panoramic view as you practice takeoffs, landings, and aerobatics. You can even test your flying skills in the World War I Ace aerial battle game. Multiple windows allow you to watch two or more viewpoints simultaneously. ($49.95)

Lifenet LAN

Univation Inc. (408/263-1200) has acquired the exclusive marketing rights to Lifenet, a highly advanced fault-tolerant LAN operating system for PCs from the Lifeboat Systems Designer Team of Troy, MI. This system provides data security features such as transaction processing, transaction logging and file recovery software.

AMIGA

Lattice C Compiler

Lattice, Inc. (312/858-7950) is releasing Version 3.10 of the *Lattice AmigaDOS C Compiler*. In addition to the new library with 100 functions more than the standard Amiga C, Version 3.10 features increased library modularity and new addressing modes that help reduce load module sizes by more than 20 percent.

ProWrite

New Horizons Software, Inc. (512/329-6215) has announced *ProWrite*, which is scheduled for release in February. *ProWrite* offers a wide choice of proportionally spaced character fonts, sizes, styles and colors. In addition, the mouse- and keyboard-based program incorporates Amiga's extensive graphic capabilities and allows editing functions among as many as eight windows at once. ($124.95)

APPLE II

DOS Boot

Orange Micro Inc. (714/779-2772) has introduced DOS Boot, a coprocessing system that makes the Apple IIGS IBM PC compatible. There's 256K of onboard RAM, expandable to 512K. If you use RamPak 4GS or other memory cards, the onboard memory can be expanded to 640K. Other features include an IBM-compatible floppy drive controller, a mouse, game ports, IBM CGA emulation, and two serial and one printer port. A numeric coprocessor may also be added.

IBM PC COMPATIBLE
SALE!!

IF you're looking for a BUSINESS COMPUTER SYSTEM, you have a lot of companies to choose from. You can buy from a discount "box shop"; you can try a retail store, where you're not sure if the salesman will be around next week; OR, you can buy from a company who's been around for a while.

At **SILCO COMPUTERS, INC.**, we know computers. AND, we know how your business should operate. We won't sell you just a box, and we won't sell you MORE than you need. What we will HELP you find is the system that is right for YOUR NEEDS. At the RIGHT PRICE. Stop in and see some of our systems today. Some typical examples are:

Basic System
256K Main Board 8088
Chassis
135 Watt Power Supply
5150 Keyboard
One 360K Floppy Drive
Floppy Disk Controller
6 Months Warranty
(Disk Drive - 3 months)

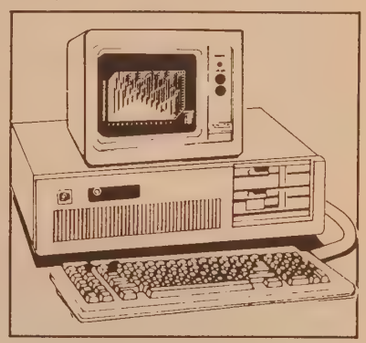
$495

Hard Disk System
640K Main Board 8088
Chassis
135 Watt Power Supply
5150 Keyboard
One 360K Floppy Drive
Floppy Disk Controller
20 Mb Hard Disk w/Controller
6 Months Warranty
(Disk Drive - 3 months)

$995

PC/AT System
1 MB Main Board 80286 (8 Mhz, 640K installed)
Chassis
200 Watt Power Supply
Keyboard
1.2 MB Floppy Drive
Western Digital Controller
Model WA2
20 Mb Hard Disk
6 Months Warranty
(Disk Drive - 3 months)

$1895



MISC. PRODUCTS

640K Main Motherboard 8088 (0K)	$105
Mono Printer Card	85
Color Graphics Card	85
Floppy Disk Controller	30
Samsung TTL Green, 1254G Monitor	95
Taxan 630 RGB Hi Res Monitor	595
5150 Keyboard w/larger Enter Key	85
5160 Keyboard w/AT layout	95
150 Watt Power Supply	85
200 Watt Power Supply	105
Modem 2400B	375
Modem 1200B	150

Dealers and Consultants: Call for Quantity Pricing

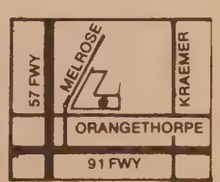
Installations • Configurations • After Sale Service & Support

Silco Computers Inc.

(714) 996-6900

187 W. Orangethorpe Ave., Units K & L, Placentia, Ca.

Orange Freeway Business Park



Sale Prices Are Cash Prices Only
Sale Prices Effective 10-16 thru 10-22-86
Weekdays Open 8:30-5:30
Saturdays 10:00-5:00 p.m.

MasterCard VISA

RapidFile

Ashton-Tate (213/329-8000) has introduced *RapidFile*, a high-performance file manager that allows business users to manage data, create reports, write form letters and produce mailing labels. The product uses *dBASE III PLUS* files and also offers users a direct growth path as their data management needs become more sophisticated. The program offers a choice of interface, speed, storage capacity, and multiple functions on one disk as well as multiple layouts. ($395)

FormTool Upgrade

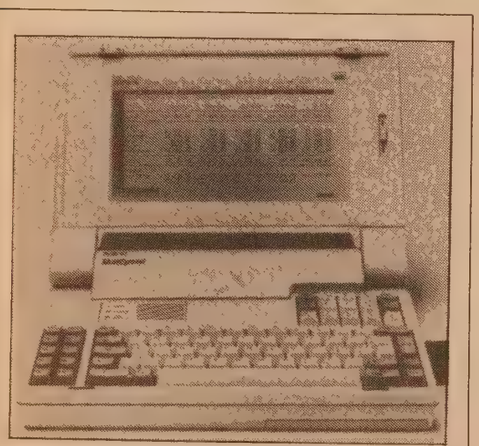
BLOC Development Corp. (305/531-5486) has announced that its program, *FormTool*, will possess new features as of January 1987. Version 2.0 has a new data merge capability, additional fonts, and more powerful word processing capabilities, as well as sideways printing and extensive printer support. *FormTool* lets you easily create, manage, print and further customize forms. ($95)

PC-TYPE+

ButtonWare (206/454-0479) has debuted *PC-TYPE+* (version 1.0), which comes with many new features: Mail-Merge, Fault Finder (a spelling checker), a Whoops! Key, the ability to edit multiple files, and more. The Fault Finder contains 100,000 words and checks for typos and double words; the Mail Merge option allows keyboard input and works with *WordStar* and *PC-File* databases; the PC-Label program eliminates the headaches of printing labels. The package has extensive onscreen help. ($69.95)

TimePiece

Communication Dynamics, Inc. (503/684-5151) has released a new project management program, *Timepiece*, which enables users to easily manage multiple projects using a common pool of resources, which can be tracked across multiple projects. Based on a time-indexed CPM network, *Timepiece* automatically calculates a project's critical path, slack time, and ending date as new information is entered. ($695)



NEC Multi-Speed

NEC Home Electronics Inc. (312/860-9500) has introduced a PC-compatible portable computer called the MultiSpeed. This unit operates at both 4.77 MHz and 9.54 MHz; it utilizes DOS 3.2 and features two 3.5-inch floppy disk drives. Other features include detachable screen with high-contrast LCD, built-in firmware with windowing, 640K of RAM, 512K ROM, and a separate numeric keypad. The MultiSpeed contains parallel, serial 232C and RGB video interface ports, as well as an external floppy disk controller port. ($1,995)

CyberType

CyberResearch Inc. (203/786-5151) is shipping *CyberType*, a desktop publishing program that operates from within Microsoft *Word*. *CyberType* has a new *CyberMerge* option that integrates halftone images from the AT&T TARGA video system or desktop scanners and graphic drawings from *AutoCAD*, *Lotus 1-2-3* and other graphics software, into word processed files. Both *CyberType* and *CyberMerge* packages are available at $495 each.

Enhanced Printrix/Fontrix

Data Transforms (303/832-1501) has enhanced the *Printrix* and *Fontrix* programs. *Fontrix*, which acts as a WYSIWYG typesetter, a graphics creation package, and a font editor, is now able to create and use fonts twice the previous maximum size. *Printrix* has been enhanced to accept the new, larger fonts created by *Fontrix*. Font libraries for both programs have been expanded to hold more fonts in memory, allowing up to 320K of memory for font storage.

GEM Draw Plus

Digital Research (408/649-3896) is now shipping *GEM Draw Plus*. Offering increased functionality, this new graphics program offers both keyboard and sidebar shortcuts, ability to save user preferences for next use, a help menu, and nested groups.

Spellbinder PostScript Version

Lexisoft (916/758-3630) has released a new PostScript version of *Spellbinder Desktop Publisher*, Version 6.3, which also incorporates Cordata laser drivers and the ability to perform quadplex and duplex printing. The quadplex and duplex capabilities were added to streamline the production runs of booklets and reports by automatically laying out text in proper sequence for side by side or back to back printing. ($695)

Intel 386 Software

Intel Corp. (503/681-2279) has extended its software development support of the 80386 microprocessor system to PC hosts with the introduction of a C language compiler and utilities package for IBM PC/AT and AT-compatible PCs running DOS 3.0 or later. The C 386 Compiler and RLL 386 Relocation, Linkage and Library Tools package are the industry's first 80386 development tools for PC hosts; they can be used on stand-alone PCs, PCs linked with other PCs, or with VAX and MicroVAX+ computers via the Intel OpenNET network. The C386 Compiler and RLL 386 Relocation, Linkage and Library Tools package are available now, for $900 and $600 respectively.

Software-Based PC Emulation

Phoenix Technologies Ltd. (617/769-7020) has announced the development of a "software coprocessor" technology that enables manufacturers of computers based on noncompatible processors (such as the Motorola 68000 family) to offer an MS-DOS-based PC-compatible operating mode entirely through software emulation. Shipments of the new product, *Soft Co-Processor*, to OEM customers will begin in the first quarter of 1987.

Crystal Publishing System

Syntactics (408/727-6400), a veteran of the UNIX environment, has released a new MS-DOS publishing system called *The Crystal Publishing System*. This package combines Syntactic's *CrystalWriter Plus* word processor with their new *CrystalTypeset* typesetting software. This is a document management tool that enables both experienced and novice users to produce typeset-quality docu-

European Report

By Ken Lisec

Communication Without Cables

Personal computers, printers, disks etc., can communicate with each other without complicated and expensive wiring costs. Using a building's electrical outlets, a system called Powernet 300 can be installed and the existing electrical wires used instead of separate cables. The system has a coding generator which enables up to 80 separate devices to be connected together. Introduced by Radamee Electronics of Crowthorne, Berkshire, the product is available now.

Clones, Clones, And More Clones

The low end of the U.K. market is totally cluttered with IBM compatible PC/XTs. More and more entries are appearing every day. Now for the top end of the market.

What does the AT area look like? Is it as cluttered as the low end? Are the price ranges as varied as the XT? Well, here are the facts—low end entry prices are quoted and no attempt is made to match features, but the system, as shown, is configured with a monitor, keyboard and magnetic storage. Keep in mind that two years ago there were no computers in this category selling in the UK.

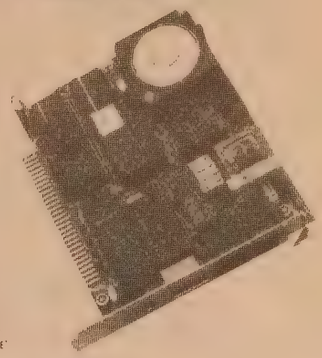
COMPUTER	CHIP	SPEED	BASE $
AJWAD AT	80286	6/8/10 MZ	2,400
AJWAD 501 AT	80286	8/10 MZ	1,420
APRICOT XENI	80286	10 MZ	6,270
APRICOT XI 10	80286	8 MZ	2,837
APRICOT XI 20	80286	8 MZ	3,547
BASICTIME AT	80286	8 MZ	4,055
BRISTOL 286	80286	10 MZ	1,687
CAS AT/TURBO	80286	6/8 MZ	1,445
TI BUSINESS PRO	80286	6 MZ	5,673
COMPAQ DESKPRO 286	80286	6/8	4,820
COMPAQ DESKPRO 386	80386	16 MZ	7,666
COMPRO AT	80286	8.77 MZ	3,117
EPSON PC+	80286	8 MZ	2,950
GOUPIL G40	80286	8 MZ	5,110
HYPERPRO II	80286	10 MZ	6,745
OLIVETTI M28	80286	8 MZ	5,255
NCR PC8	80286-8	6/8 MZ	3,515
FERRANTI AT	80286	8 MZ	4,544
IBM AT	80286	6 MZ	4,083
HP VECTRA	80286	8 MZ	5,517
KAYPRO 286I	80286	6 MZ	3,550
IBM AT/E	80286	8 MZ	4,513
SPERRY PC MICROIT	80286	6/7/16 MZ	3,614
PCC8/10	80286-10	6/8/10 MZ	2,833
COMPAQ 286	80287	6/8 MZ	6,880
SPERRY PC/IT	80286	6/7.16/8 MZ	5,548
TANDON PCA	80286	6/8 MZ	2,478
TANDY 3000	80286	8 MZ	2,550
KYOCERA V286	80286	6 MZ	2,840
TELEVIDEO 286	80286	8 MZ	3,827
TOSHIBA T3100	80286	8 MZ	5,247
N.T. VIENNA AOC	80286	6 MZ	4,420
ERICSON WS286	80286	6/8 MZ	4,949
WALTERS AT	80286	8 MZ	1,987
WANG ADV PC	80286	8 MZ	4,004
ITT XTRA XP	80286	6/8 MZ	4,367
ZENITH Z-248	80286	6 MZ	3,607
VICTOR V286	80286	8 MZ	3,550

Thirty-eight of the PCs claim 100% IBM compatibility and range in price from just a little over $1,000 to $7,000. The list is growing so fast that a company has been formed just to test these clones and run standard software on them to prove compatibility.

New Expanded Showroom and Service Facilities

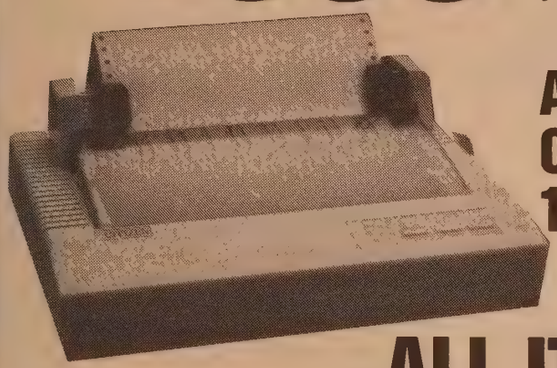
LEADING EDGE HEADQUARTERS

NEW "Turbo" Models Now In Stock



LEADING EDGE®
Authorized Leading Edge Dealer
INCLUDES:
- Dual Floppy
- 512K Memory
- Monochrome Monitor
- Leading Edge 1200 Baud Modem
- Leading Edge Word Processor Program
- Twin Spreadsheet (1,2,3 work-a-like)

$1395



AND CITIZEN 120-D PRINTER

LEADING EDGE®

LEADING EDGE MODEM

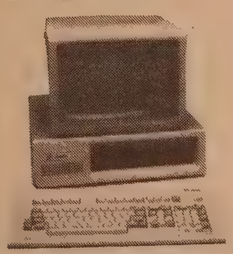
INCLUDES:
- Hayes Compatible
- Auto answer/auto dial
- Half Card
- Full, or Half Duplex
- 2 year warranty
- Bit-Com Software

1200 BAUD $129.95

2400 BAUD $249.95

ALL ITEMS IN STOCK!

THE ALR XT TURBO PACKAGE



- "AT" Style Keyboard
- 640K RAM
- 360K Floppy
- 8088-2 Processor
- Phoenix Bios
- 4.77 & 8 MHz Switchable
- **20 MB Fixed Disk (SEAGATE)**
- Monochrome monitor & adapter
- 8 expansion slots
- **CITIZEN 120-D PRINTER**
- FCC & UL APPROVED
  MADE IN AMERICA

COMPLETE IBM COMPATIBILITY

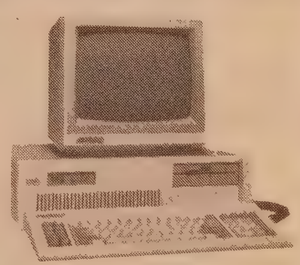
ALL FOR $1495

ALR PC2/286

- Dual Speed (6 or 8 MHz switch selectable, 10 MHz optional)
- 512K RAM (expandable to 1 MEG)
- 1.2 MEG Floppy Disk
- Monochrome Monitor & Adaptor
- **20 MB Fixed Disk (Seagate)**
- Phoenix Bios
- FCC & UL APPROVED
  MADE IN AMERICA

100% IBM COMPATIBILITY

ALL FOR $1795



(monitor optional)

TOSHIBA 1100+ Laptop
- 640K
- 2-3.5 Floppys
- DOS
- Sidekick
- Carrying Case

IN STOCK/LOWEST PRICE

ORANGE COUNTY'S LOW PRICE LEADER

COMPAQ®

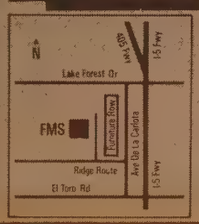
Portable II $2795

Deskpro III $1995

(monitor optional)

Deskpro IV $2695

286 Models from $2695



23461 Ridge Route
Suite B
Laguna Hills, CA 92653

FMS COMPUTERS

(714) 583-1000

ATARI®
After Christmas
Sale

ATARI 520ST

Includes:
- 512K RAM
- CPU
- 1-360K Disk Drive
- Color Monitor
- 4 Starter Software Programs—First Word, Neocrome graphics program, BASIC & LOGO
- Midi In/Out Ports
- RS 232 Serial Modem Port
- Parallel Port
- Game Port

$999

COLOR SYSTEMS CALL FOR BEST PRICES!!

All ST Packages include a **FREE** box of diskettes

ATARI 1040STF™
Personal Computer System
The Only One Megabyte Computer for under $1000.
- Integrated CPU, keyboard, disk drive design
- 1,048,576 bytes of RAM
- 196,576 bytes of ROM
- 3½" DS/DD Disk Drive
- Sound generating capabilities—3 voices from 30 Hz to above audible range
- 512 Colors
- Midi In/Out Ports, etc.
- RS 232 serial modem port

$1199 COMPLETE

Paradox 5¼" 360K DS Drive includes IBM emulator & software 100% Compatible $269 (reg. $450)

ATARI MicroFloppy Disk Drives
High Speed, State-of-the-Art Storage Capability. Compatible w/ALL Atari ST Personal Computer Systems.

SF314 Disk Drive $250 DS/DD-720K (formatted) Reg. price $299.95

SF354 Disk Drive $159 SS/DD-360K (formatted) Reg. price $199.95

ATARI SMM804™ Dot-Matrix Graphics Printer
Maximum Versatility-and Easy to Use.
- Compatible w/all Atari ST Personal Computer systems
- 10 Printing Options
- Full graphics capability

$199.95 List $219.95

PRINTERS
CANON PJ1080A Color Printer (Ink Jet) 7 Colors
Our LOW, LOW Price—JUST $250 Normally runs $699
DICONIX by Kodak—Model 150 (Ink Jet)
Our Price—$375 (List $469.95)
STAR NX-10 Dot Matrix **$290** (List $349)

SHANNER
Double Sided Drive
$399.95
$429.95 List

QMI Modem Model 1200 ST
- 300/1200 Baud
- Hayes compatible, auto dial, auto answer, RS 232 Interface
- Comes with ST TALK Software

$185

STOCKING STUFFERS

Software	List	OUR PRICE
SPACE STATION by Paradox	39.95	32.95
ST KARATE	39.95	32.95
ST PROTECTOR	39.95	32.95
JOUST by ATARI	24.95	20.95
DEGAS ELITE by B.I.	79.95	69.95
DEEP SPACE by Psygnosis	49.95	38.95
STARGLIDERS by Rainbird	44.95	37.95
ARENA (colour) by Psygnosis	39.95	32.95

ISGOR PORTFOLIO for ST	199.95	165.95
WRITE 90 (incl. sideways routine for VIP)	29.95	24.95
ST ONE WRITE ACCT. SERIES		89.95 per module
FLIGHT SIMULATOR II	49.95	37.95
NEW TECHNOLOGY by E.A.	19.95	18.95
SUPER CYCLE	39.95	34.95
BALLYHOO	39.95	29.95
THUNDER SPELLCHECKER	39.95	34.95
PRINT SHOP (8 bit)	44.95	34.95

HUNDREDS of games too numerous to mention. Stop by and see for yourself.

MISC.

CAROUSEL Disk Holder holds 80 3½" diskettes	49.95 / 32.95
Joysticks	
EPYX 500 XJ	14.95
ATARI ST	9.95
Speedpads	14.95
Dust Covers	from 9.95

The Consumer Electronic Store
"Your Atari Headquarters"

335 S. State College Blvd.
Fullerton, CA 92631

(714) 447-8300

Software Pipeline℠

Over 800 titles to choose from!

Jerome D. Bugg℠

The smart way to buy software
Try it first.

Use any program for 3 days for only

$5.00 *

Software for Commodore, Apple, IBM and other popular home computers.

$1.00 off on P.C. Card with this ad

19447 Ventura Blvd.
Tarzana, California 91356
(818) 996-5535

* A few programs are priced higher.

ments, using any IBM micro or compatible with output to a Hewlett Packard LaserJet printer. ($895 for the complete system, or $495 each for *CrystalWriter Plus* and *CrystalTypeset*)

Color Perspective

Three D Graphics (213/459-7949) has introduced *Perspective II*. This data graphics package can transform data, automatically, from other productivity programs, and can generate over 400 colors from the 16 basic colors offered by EGA and other compatible controllers. *Perspective II* features a five-key user interface, and also has over 30 help screens. ($395)

Quantum Graphics

Threshold Software Corp. (312/887-0480) has introduced *Quantum Graphics*, which produces PostScript based business graphics, which can be integrated with text on either a portrait or landscape page. ($395)

MACINTOSH

PageMaker Portfolio

Aldus Corporation (206/622-5500) is releasing *PageMaker Portfolio: Designs for Newsletters*. The initial release is for the Mac version of *PageMaker*; the company plans to release 21 different newsletter formats. These designs, or templates, will be packaged on disk and accompanied by a step-by-step instruction manual that explains how to incorporate your own copy, headlines and artwork into a finished newsletter. The manual accompanying the templates also gives users advanced techniques for adding a designer touch or two to their newsletter efforts.

Enhanced TurboPascal

Borland International (408/438-8400) has an enhanced version of *Turbo Pascal* for Macintosh users. Users can compile and run as many as eight separate programs—or eight versions of the same program—simultaneously while developing programs in *Turbo Pascal*. The offering now includes a special TurtleGraphics unit, which provides an easier way to handle graphics output to the Mac. ($99.95)

MS BASIC Compiler

Microsoft Corp. (206/882-8080) has announced the Microsoft BASIC Compiler for the Macintosh. The compiler allows programs written in Microsoft BASIC Interpreter to be compiled with little or no modifications. Compiled programs execute 10 to 30 times faster. A Toolbox Library accompanies the Compiler, which includes over 140 software routines that make it easier to access the Macintosh Toolbox ROMs. ($195)

NETWORKING/ COMMUNICATIONS

Cordata LAN

Cordata Technologies, Inc. (805/495-5800) has introduced a LAN system, comprised of the company's 80286-based file servers, communications hardware, and Novell, Inc.'s network operating system software. The CS 4400 series LAN is offered in two models based on the Cordata ATD, a high-performance AT-compatible computer which operates at 8 MHz with no wait states. The CS 4400 network operating system comes standard with CS 4400 series LANs, which feature full compatibility with MS-DOS 3.1 and NETBIOS. Each file server incorporates communications hardware and software that provide gateways to X.25 public networks and networks supporting IBM's 3270 SNA.

THERE ARE MANY WAYS TO RUN A BUSINESS!

WE STREAMLINE PRICES!

WE INVITE YOU TO EXPLORE YOUR PROFIT MAKING ALTERNATIVE

NEW RELEASE!!!

NEW MULTITECH PLUS 700 PC, 256K RAM (UPGRADABLE TO 640K), 2DSDD 360K FLOPPY DRIVES
SERIAL/PARALLEL/CLOCK/CALENDAR
FULL WP KEYBOARD

ONLY $799

WHAT A HIT

NEW MULTITECH 900 AT COMPATIBLE
10MHz SPEED, CLOCK, DOS, 20MB HARD DISK, 1.2MB FLOPPY, AT KEYBOARD, 1024K MEMORY

ALL FOR $2049
1 YEAR WARRANTY YEAH!

OTHER MULTITECH PRODUCTS

Comco 2400 PC Modem	$255
Serial/Parallel Card	75
MonoChrome Graphics Card	95
Color Graphics Card	105
EGA Card	265

Authorized MULTITECH Dealer

STUDENT STARTER SYSTEM

PHOENIX PC II
Turbo 2 speed
2 Drive
265K
Mono Monitor
Serial/Parallel

$845

DEALERS WELCOME LARGE STOCK, LOW PRICES

O'l Reliable — COMPAQ

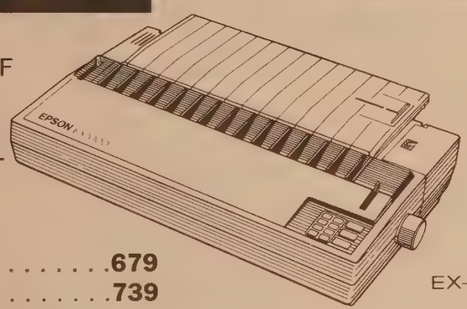
FEATURING
NEW 386 EXCLUSIVE!!
New Compaq 386 Now on Display & in Stock! Move up to 16 MHz, 32 BIT, High Performance Environment, Corporate Discounts Available

BEST BET—COMPAQ

Deskpro 20MB, 640K, w/monitor	$2195
Deskpro 30MB, w/monitor	2395
COMPAQ Portable II 640K, 20 MB	3100
COMPAQ Portable II 256K, 2 DR	2695
COMPAQ Portable 640K, 30MB	1900
COMPAQ Portable 640K 2 DR.	1649

NEW-EX1000-EPSON

- 300 CPS DRAFT
- NLQ, ROMAN, SANS SERIF
- TRUE PROPORTIONAL
- TRACTORS INCLUDED
- COMPLETE FRONT PANEL
- FULL COLOR OPTION
- WIDE CARRIAGE



EX-1000

B/W INCLUDES CABLE	679
COLOR	739

TOSHIBA PRINTERS

P321 w/Cable & Tractor	$535
P341 w/Cable	789
P341E w/Cable.	849
P351 w/Cable & Tractor	1049
P351C w/Cable	1099

TOSHIBA COMPUTERS

T3100 Plasma 80288 Laptop	$3395
T1100+	1895

Modem & External 5¼ Drive Available

UPGRADE SPECIALS

NEC Multisync Monitor w/EGA Card	$899
Vega Deluxe EGA Card.	399
Sony KV1311 Color Monitor/TV	389
Fujitsu Half Height Floppy Drive.	79

INTEL CHIPS

8087 Math Co-Processor.	105
8087-3 Math Co-Processor	125
80287-6	179
80287-10	375

NOW NOVELL AUTHORIZED
Corporate & Quantity Discount available
YES! We carry IBM PC/XT/AT

WE SERVICE ALL MAKES AND MODELS

COMPLETE BUSINESS MANAGEMENT SYSTEMS
CAD/CAE • ENGINEERING • PAYROLL
INVENTORY • GENERAL LEDGER
RECEIVABLES • RETAIL SALES
PAYABLES • PROJECT MANAGEMENT

. . . YOU NAME IT . . .
WE DO IT ALL
WE EXPLAIN, WE PROGRAM, WE TRAIN
WE SERVICE ALL MAKES AND MODELS
AT UNBEATABLE PRICES

HOUSE OF COMPUTERS INC

10929 SANTA MONICA BOULEVARD • LOS ANGELES • CALIFORNIA 90025

(213) 479-7745

The Santa Cruz Operation:

Taking Care Of Business With XENIX

By Bennett Falk and Mary Eisenhart

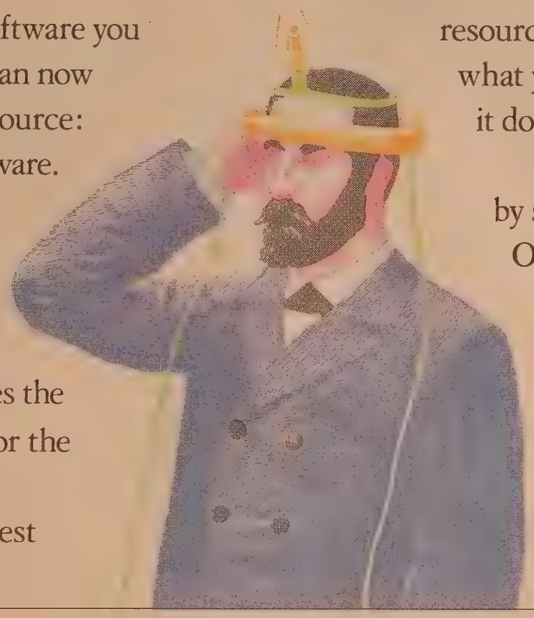
Photos by Marc Franklin

1987 may well be the year in which AT&T's UNIX operating system comes into its own in the corporate work environment. An increasing number of businesses are discovering the merits of multi-user systems in which resources are shared among a number of PC workstations. Further, as fast, powerful machines based on the 80386 microprocessor chip become readily available, the absence of an MS-DOS that begins to tap the chip's power makes UNIX an attractive alternative. Another significant advantage of this multi-user, multi-tasking operating system is that it's relatively hardware-independent and runs on a wide variety of micro- and minicomputers, thereby protecting a company's software investment as it upgrades to new generations of equipment.

· The predominant UNIX in the business world is XENIX, a value-added version licensed from AT&T by Microsoft. Versions exist for many computers, most notably the IBM PC/XT/AT and compatibles.

In order to market XENIX effectively, Microsoft devised the concept of

If you feel like a lost soul when it comes to music software, get the bible.



Almost every bit of music software you could possibly want or need can now be found in a unique single source: Coda, the bible of music software.

Detailing over 500 items which range from software to accessories to books, Coda is a remarkably user-friendly catalog that takes the confusion out of searching for the right music software. It's the computer-using musician's best resource today. In fact, if you can't find what you need in Coda, chances are it doesn't exist.

Order Coda today for only $4.00, by simply calling the number below. Or write to: Wenger Corp., 555 Park Drive, Dept. M2, Owatonna, MN 55060. It's not only inspirational, it's divine guidance.

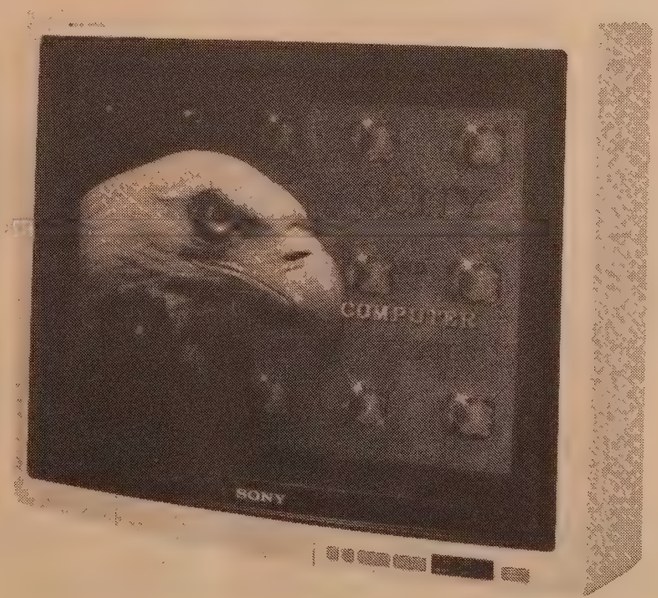
Coda. 1-800-843-1337.
All major credit cards accepted.
Or call collect 1-507-451-1951.

SONY AND ATARI JUST GOT MARRIED!

Visit the bridal couple at our store exclusively!

Announcing the arrival of the SONY TRINITRON color monitors

TV/VCR monitor
Audio/video inputs
Remote control
Digital & Analog RGB input
(640 x 200 pixels)
Custom-made cable for ATARI ST
13″, 20″, 25″ models



The Perfect Marriage

Atari ST System
&
13″ Sony Color TV/Monitor

520 ST - $1049

1040 ST - $1329

(custom-cable necessary for hookup - comes with system purchase)

Other size also available
CALL FOR PRICING

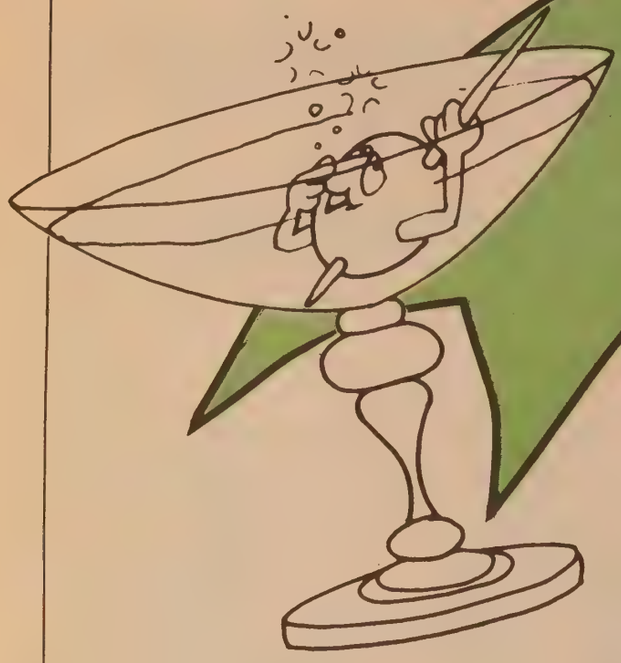
Authorized ATARI
Sales and Service Center

MID-CITIES COMP/SOFT

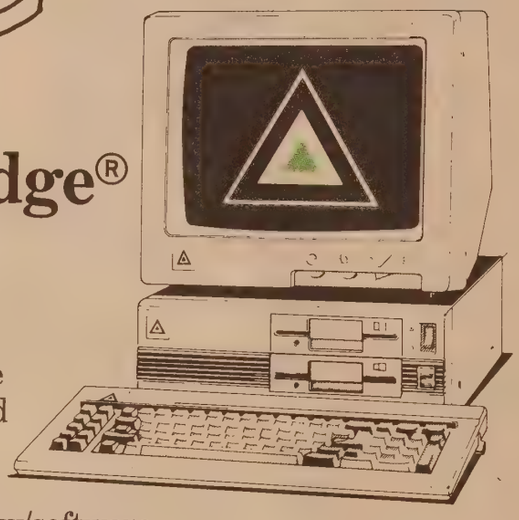
(213) 867-0626 (213) 867-8994

9406 Flower St. Bellflower, CA 90706

M-F 10AM-7PM
Sat 10AM-6PM
CLOSED SUNDAYS &
PUBLIC HOLIDAYS



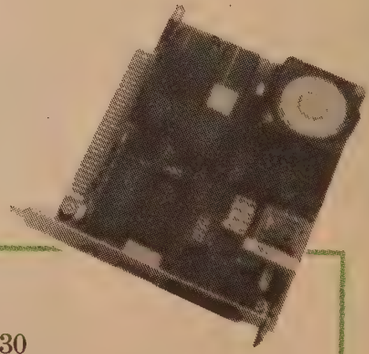
Happy



Leading Edge® Model "D"

- Monochrome monitor
- 768K
- Parallel/serial interface
- Selectric type keyboard
- 15 months warranty
- 30 MEG HARD DISK
- 1200b internal modem w/software

Come in for best price



The Leading Edge Model "L" Series 2400B Modem is fully Hayes and IBM®-compatible, has auto-answer and auto-dial features, fits in a half-size expansion slot and operates at 300, 1200 and 2400 bps as well. And it's warranteed two full years longer than any Hayes modem.

January Specials

Leading Edge Model "L" modem 2400 Baud	$230
Leading Edge model "L" modem 1200 baud	130
Twin	49
Leading Edge® wordprocessor Spelling checker upgrade	15

6 ho
softwa
class
CAL
CLAS

Authorized Leading Edge Service Center

LEADING EDGE®

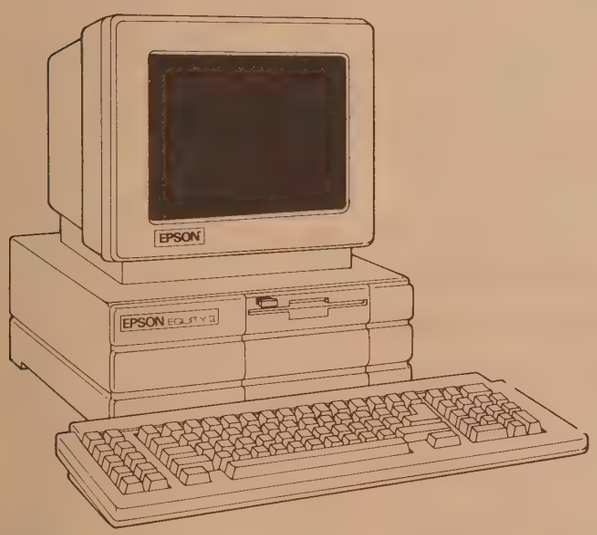
Authorized Retail Dealer

Leading Edge is a Registered Trademark of Leading Edge Products, Inc.
Nutshell is a Registered Trademark of Nashoba Systems, Inc.
Model "D" is a trademark of Leading Edge Products, Inc.
Twin is a registered trademark of Mosaic Software, Inc.
Model "L" is a trademark of Leading Edge Products, Inc.

HAPPY NEW YEAR!

New Year

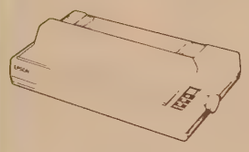
CALL FOR
LOWEST
PRICE EVER



EPSON
EQUITY™ II
PERSONAL COMPUTER

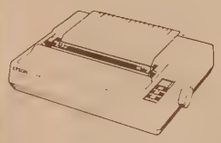
- 8086 compatible microprocessor at 4.77 MHz or 7.16 MHz
- Single floppy disk
- 640KB RAM memory
- Color and monochrome text/ graphics support standard
- Clock/calendar standard
- Serial and parallel ports
- AT-type keyboard
- Monochrome monitor
- MS-DOS® operating system
- GW-BASIC™ programming language
- One-year warranty
- 20 MEG or 30 MEG Seagate hard disk
- Epson FX-85 PRINTER

SUPER SAVINGS
WHILE THEY LAST



- 200 cps in draft
- 8K buffer
- SelecType
- 136 column
- IBM® graphics character set

EPSON® FX 286™ $474



- 160 cps in draft
- 8K buffer
- SelecType
- 80-column

EPSON® FX 85™ $374

CASH PRICE ONLY ON THESE SPECIALS

hands-on
training
available $65
FOR
SCHEDULE

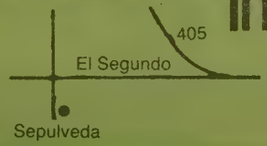
EPSON SHOWCASE PROFESSIONAL DEALER
DEDICATED TO EXCELLENCE

We crack our competitor's software prices!
Call and check it out!

MICRO COMPUTER LAND INC.

(213) 640-9457

150 S. Sepulveda,
Suite D, El Segundo



CLONEWARE

for the PC-AT/XT Compatibles and IBM too!

DeskTalk

Memory Resident!

- Address Book*
- Calendar*
- Communications
- Phone Dialer*

• CALENDAR*—maintains and prints daily, weekly and monthly appointments for all 24 hours of every day.

• ADDRESS BOOK*—organizes, sorts, indexes, searches and prints names, addresses, phone numbers, notes and more.

• PHONE DIALER*—automatically dials phone numbers and long distance prefixes for you.

• COMMUNICATIONS—fully Hayes compatible; allows you to send and receive information quickly and easily.

Non-resident versions also included. $59.95

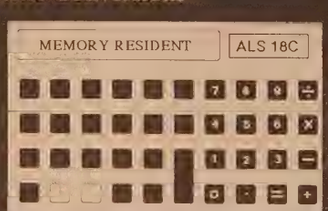
ALS 18C Financial Consultant

This easy to use, menu driven program runs as a memory-resident "pop-up," providing instant access to your calculator even while you are using another program!

- Internal Rate of Return
- Loan Amortization
- Break Even Analysis
- Buying vs Leasing
- Discounted Cash Flow
- Savings and Annuities
- Real Estate
- Depreciation
- Statistics
- Leasing
- Percentages
- Metric Conversions
- Simple Interest
- IRA
- Dates
- Bonds
- Investments

SCIENTIFIC CALCULATOR

• computes log, sine, cosine, pi, tangent, inverse, square root, exponents, and more in either decimal or hexadecimal notation.



$89.95 Non-Resident version also included

See your dealer or order direct from ALS

_____ALS18C Financial Consultant _____DeskTalk

Name _____ Day Phone _____

Address _____

City, State Zip _____

Circle One: VISA MasterCard American Express Check Moneyorder

Card # & exp. _____

TOTAL ENCLOSED: $ _____

Signature (required for credit card orders) _____

California residents add 7% sales tax.

SEND TO: Advanced Logic Systems, 1283 Reamwood Ave., Sunnyvale, CA 94089 or call us to order by phone. Orders outside US add $10.00

Advanced Logic Systems, Inc.

1283 Reamwood • Sunnyvale, CA 94089 • 408/747-1988

Doug Michels: "It's really an iterative process. Every release we make a long list of things we'd like to do—the first thing on the list is always 'What is causing the users the most trouble?' If we solve a problem, if we cut down one phone call per user, that's a huge thing."

"alternate sources" for XENIX, by which smaller companies would join forces with Microsoft, continuing development of the operating system itself and of the application packages which would provide specific solutions. These companies would also provide all-important support services to users of XENIX-based products. There were two such companies worldwide: Logica, based in London, and the Santa Cruz Operation, based in Santa Cruz, California. In November 1986, SCO and Logica joined forces in SCO Limited, creating a unified alternate source for XENIX worldwide.

Founded in 1978 by Larry Michels and his son Doug as a consulting firm, SCO has been developing and marketing systems software for the UNIX environment since 1979. It offers a full range of support services and software packages for business environments. SCO's software offerings include SCO XENIX System V, a commercially enhanced version of the UNIX System V licensed from AT&T; *Lyrix*, a user-configurable word processing system; *SCO-Professional*, a UNIX/XENIX based *Lotus 1-2-3* workalike; *SCO FoxBASE* and *FoxBASE Plus*, workalikes for *dBASE II* and *dBASE III*; SCO UniPATH SNA-3270, mainframe communications gateways which allow XENIX systems to operate on IBM SNA networks; SCO XENIX-Net, a Local Area Network system for integrating XENIX/DOS environments, and a wide range of other applications.

With its extensive repertoire of products and services, SCO seems ideally positioned to take advantage of the arrival of new, powerful microcomputers to broaden the acceptance of UNIX in the corporate world. Meanwhile, however, new contenders are eyeing this lucrative market and coming out with their own licensed versions of UNIX—the notable example being Microport, which offers a two-user bare-bones PC-based UNIX operating system for a mere $169, a package some manufacturers are bundling with their 386 machines.

When we visited the SCO offices recently, the senior and junior Michels (who now hold the titles of president and vice president of research and development respectively) spoke about SCO, its role in the marketplace, and how it plans to face future challenges.

How did you come to start SCO?

Larry Michels: The business started after a number of years I spent at TRW. I watched them struggle with how to move from a low technology company—auto parts, things like that—to a high technology business. The fact is, they bought some large number of companies, and failed with each one they bought.

There were a number of reasons. One was that the culture would only accept certain kinds of people. They weren't willing to change to the people that they had to. Nor were they willing to change the management practices they had. Nor were they willing to change the budget or any other cycles that they had.

These were all high-tech businesses—point-of-sale, bank teller machines, credit authorization machines. One other aspect that TRW didn't understand was that these businesses were computer business-

es. They were software businesses. They thought they were buying a telephony business, they thought that telephony was telephony, but they really were computers. Unless you approached them as being computer businesses, you didn't end up with anything.

Characteristic of the telephone business over a long period of time is that telephones don't change fast because tariffs don't change. However, introduce electronics and you introduce the ability to change faster, and suddenly you find yourself in deregulated environments where tariffs are no longer an issue. Speed was important, and yet the whole structure of the business did not allow for speed. Fundamentally they failed because they could not understand the cultures they were going into.

Well, Doug and I took that here, and we thought, if TRW was having so much trouble, it was probably an interesting business, being able to offer what we had learned in how you go about making these transitions. And so we hung up a shingle and started to offer these services.

We found out almost immediately that it was a futile business. Why? Because invariably the price of success was new management techniques and new management. And so the people that hired you, you had to go back to them and say "the way you succeed is change your staffing, change your approach, change your goals, change your methods." And they said "Thank you," and you were never invited back a second time. (laughs)

You cannot run a consulting business by doing that. So we recognized that working with companies and helping them recognize the disasters they were headed for was almost immaterial.

We had realized, from some of the work we had done, the value of portability—that you had to have the freedom to move through generations of technology without destroying the investment you had made in software. We began to recognize that UNIX, which we had used as a tool internally, was probably the coming vehicle. We also recognized the tremendous opportunity, because AT&T had this operating system and didn't quite understand what to do with it. This was about 1981.

System 7 was the first UNIX licensing introduced with the ability to sell inexpensive binary licenses. Prior to that all you could do was buy source licenses, so the price of the machines was many thousands of dollars.

This was a tremendous buy. This was tremendous power. You could take inexpensive PDP-11 machines, put UNIX on them, and just about run circles around anything that was out there. We recognized that that was an emerging market, and that that was probably a place to invest and to start building talent. And then along came Microsoft.

Microsoft did something fairly bold. They said "Here is an enormous opportunity"—again, because AT&T was really not producing a commercial product. Microsoft's grand plan was to take every major microprocessor and make a value-added form of UNIX called XENIX available for it. Microsoft, however, ran into an immediate problem. They were not set up to deliver support and hand-holding. They are in a business that's largely based on being a commodity supplier—here is the product, pay us the money, then go off and make it work.

Not the kind of thing you can do with a UNIX operating system.

Not and succeed, anyway. (laughs) So they in effect hatched the idea—and it was a very good idea—the idea of the second source. They would set up x number of small companies that would, in effect, provide the kind of support and service that the larger companies needed. They set up a revenue-sharing basis so these companies would get a piece of the action, so to speak.

What finally happened is that there turned out to be two second sources. There was a company in England called Logica, and a company in the states called SCO. The company in England is the one we just merged with, and plan to use that to expand our capabilities.

SCO is a very unique organization. It is tuned to bring a high degree of value-added to the multi-user market. The high-end PCs—the 286 machines—are practically a revolutionary concept. They are metaphors, if you will, the same kind of metaphor that the Model T Ford was. The Model T Ford came along as not the pioneer of automobiles but the pioneer of transportation. Suddenly we had a low-cost, reliable transportation device for the masses. We didn't have to live next to where we worked, we built garages, roads, planned our cities differently, and the world changed around us.

If you start thinking of the PC in a similar vein, that it is a very high power, low-cost, reliable source of computing power; if you put to it the kind of tools that SCO is pushing, namely the operating system and the various applications, tools that we're adding to it, and turn that loose with people who can adapt these systems to meet the ordinary needs of business—the needs to communicate, the needs to gather data, present data, where you have a group of people that have to work together and share resources or report to a mainframe or another large computer someplace—suddenly you can do this for sums of money around $10,000. You don't need a special environment, you don't need an expensive service contract.

You don't need to be locked into IBM's way of doing things...

You don't need to be locked into anybody's way of doing things. You

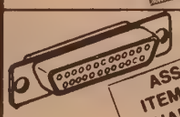
SAVINGS & SELECTION AT EAGLE ELECTRONICS

EAGLE SPECIAL

PARTS SUPPLIERS

OVER 100,000 Various Items On Display

- For The Computer Installer
- For The Computer Serviceman
- For The Electrical Contractor



ASSORTABLE ITEMS FOR BEST QUANTITY PRICES

D-Sub-Miniature Connectors

Industry Standard Connectors for: Data Cables - Computer Systems - Peripherals

	1-9pcs	10-24pcs	25-49pcs	50-99pcs	100-999pcs	1000pcs
DB-9P Plug	.69	.49	.39	.35	.32	.30
DB-9S Socket	.72	.54	.42	.39	.35	.33
DB-15P Plug	.85	.69	.51	.47	.43	.40
DB-15S Socket	.97	.77	.60	.55	.50	.47
DB-25P Plug	.97	.77	.60	.55	.50	.45
DB-25S Socket	.97	.77	.60	.55	.50	.45

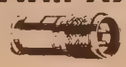
IBM/PC, XT Printer Cable

(and for Compatibles)

Very high quality. Fully shielded w/ molded end. Six foot.

8.95 EA
6.50 EA (10 pieces)
5.80 EA (50 pieces)
5.40 EA (100 pieces)

Twin-AX Connectors



	MALE TYPE CONNECTOR	FEMALE INLINE SPLICE
1	4.49	5.45
10	3.90	4.90
50	3.65	4.50
100	3.25	3.90
1000	2.95	3.65

WALL PLATES

Available for all DB, Coaxial and Twinaxial type connectors
We Stock Singles , Doubles, Etc.
Please Call for Best Prices

Computer Data Switches

A-B SWITCH
- Our Best Seller
- Switches 25 Contacts
- Model EE-25

39.95
36.95 EA (5 or more)

PUSH BUTTON STYLE
MODEL EE-25PB
29.95
CALL US FOR OTHER STYLES

RS-232 To Modular Plug Adapters

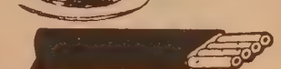
Allows use of low-cost and flexible 4, 6 or 8-wire telephone wire for interconnection of RS-232 devices.

	1	10	50
6 Contact to DB-25 Connector	$4.95	3.90	3.50
8 Contact to DB-25 Connector	$4.95	3.90	3.50

Flat Telephone Cable for Modems and Telephone Data

Very flexible and economical cable manufactured to tough specifications required by most telephone companies. Available in four, six or eight conductors. Made for use with telephone plugs below. Outer jacket, color coded internal insulation. 1000 Ft.

WE ALSO STOCK SHIELDED MULTI-COMDUCTOR COMPUTER CABLE



4-Conductor	32.50	per 1000 ft.
6-Conductor	42.20	per 1000 ft.
8-Conductor	58.80	per 1000 ft.

PHONE OR WRITE FOR OUR CATALOG

We Ship via UPS anywhere in U.S. 1-800-992-3191 We Welcome Commercial Accounts

EAGLE ELECTRONICS

1233 E. Colorado Blvd. (818) 244-3191 Established 1963 Glendale, CA 91205 (213) 245-2338

Name Brand Quality
At A
Plain-Wrap Price

$195

ADEUS CP2000
Electronic Daisy Wheel Printer

Compatibility has become one of the most important features to consider when selecting a printer. That's why we introduced the Adeus 2000 — a *fully compatible* high performance letter quality printer.

It's compatible with the IBM PC, Apple II, and other major computers which support Diablo 630 WP sequencing.

And it can use, interchangeably, Diablo ribbons and Qume daisy wheels. It has a 2KB memory buffer that's expandable to 6KB. Best yet, it's fast, smooth and quiet (22 cps at 58 dB).

The new Adeus 2000 is compatible with all the popular software. Like Wordstar, Lotus 1-2-3, dBase III, and hundreds more.

☐ **IBM PC Compatible** ☐ **Diablo 630 WP Sequence**
☐ **Memory: 2KB — 6KB (max)**
☐ **Fast & Quiet 22 cps at 58 dB**

CASES from the KING!

XT Slide-In Case with Nickle-Plate.....$26
ATjr Slide-In Case with Nickle-Plate.....$29
AT Slide-In Case with Nickle-Plate.....$60

We supply over 10,000 cases a month to major manufacturers.

JANUARY BLOWOUT!

Monochrome Graphic Printer Card.....$60
Floppy Disk Drive Controller.....$24
Color Graphic Card w/Printer Port.....$65
Multifunction Card.....$70
Disk I/O.....$70
640K Mother Board (4.77 MHz).....$78
Turbo Mother Board (8 MHz).....$105

RIGID MERCHANDISE CORP
(213) 862-5185
8531 Florence Ave. #202 Downey, CA 90240

have the freedom to evolve the technology. In the same way that new cameras use existing films, new machines will be using the existing base of software. And the repercussions of that on society are going to be enormous.

The present computer industry is not established to deliver that kind of capability. Distribution houses tend to be largely storage, where they turn over software, they turn over hardware. A company like SCO has the resources, the engineering, the support, the commitment to take these products, work with the various Value Added Resellers and system developers to produce low-cost, reliable multi-user systems. It's a whole new concept.

The English acquisition is so important because it fits the same pattern. The intent was not to set up an English subsidiary. The intent was to extend the types of services we were able to offer here on an international basis, to the multinationals, to people who care about how products move across world boundaries.

Obviously you expect that there'll be a pretty large base of high-end PCs in Europe.

Step back and take a look at the PC market. At no time are we trying to say that multi-user systems will dominate this market. A year ago most pundits thought that if the market ever got as high as 10% UNIX, that that would be masterful. The fact is, on the high end of the machines, the numbers are way over 10%. I think at the most, though, we're talking about markets that are maybe 20-25% at best. There's maybe three DOS machines for every one of these machines.

The people that are moving machines in these markets—certainly ITT—are being very successful. The high-end machines are moving in Europe. Apricot has a 286 machine. Olivetti will have a 286 machine. I think we're going to see more and more.

Doug Michels: The thing about Europe is that the market has different players. The only US players other than IBM that are really strong worldwide are people like ITT, H-P, NCR, and they're all very strong on XENIX. One of the reasons is that the demand for XENIX is stronger outside the US.

Why?

DM: It's somewhat historical. The international market is really more adventurous. Common wisdom is that Europe is one to three years behind the US, and they typically are. The AT stuff is hitting its stride now, rather than two years ago. But in terms of the Value Added Reseller component of the market, they're more adventurous.

The reason is that they don't buy the IBM answer as the only answer. The saying in the US is "nobody ever got fired for picking IBM." That's not a saying in Europe.

Leonard Tramiel at Atari says that "nobody ever got fired for buying IBM" has never been translated into German, and Atari's very happy about it...

DM: (laughs) He's absolutely correct. In Europe they worry a lot more about price/performance; they don't spend money as freely on data processing. They were pushing multi-user CP/M systems. DRI was much more successful with Concurrent CP/M in Europe by an order of magnitude. In terms of the small multi-user system, Concurrent CP/M is the major competitor in Europe. XENIX is starting to be felt very strongly now, but those people tend to look for cost-effective solutions.

In Europe you'll see very strong commitment by the independent software vendors to Oasis, Concurrent CP/M, all of those low-end, original multi-user systems. They all have strong followings and they're still going strong. There are new machines being introduced this year with Concurrent CP/M as their operating system.

The loyalty isn't to IBM, the loyalty of the end user is to the local VAR. The local VAR there is some guy who's been around for 100 years; whether he was selling adding machines or whatever, that company has a reputation, and the local end users have the opinion that if they buy from this guy who's been in their town for 100 years, he's not going to let them down. He's got too much at stake. They'd rather trust that guy than trust IBM to deliver them a solution that would be stood behind for years to come.

And it's these guys, the local VARs, that are beginning to see XENIX as a vehicle for building cost-effective solutions. In the last six months we've seen International take off at something like twice the growth rate of every other market sector we're in. We're just seeing the tip of the iceberg.

Those guys are beginning to say "XENIX on a 286, in price, performance, reliability and everything else, is the best solution we can find right now." They'll buy the Olivetti or the Apricot or the H-P or whatever 286 box, and get XENIX on it and get the software and deliver it to the end user. That's going to be a solution that's solid, that's going to be around for years to come, it's going to be somewhat hardware-independent.

We think it's a market that doesn't go away easily. They've got a history of loyalty, a history of taking longer to make the decision and then really committing to it and investing in it.

LM: It's not only Europe—Australia and New Zealand are also very high penetration. We haven't seen much from the Far East.

DM: South America's beginning to go. The funny thing is, it's really country by country. In the smaller countries, there's really only one or two key VARs, and they were DEC for

We'll Meet Or Beat Any Advertised Price!

AMIGA

CALL FOR OUR LOW SYSTEM PRICE!

INCLUDES:

- COMPUTER
- 2 3½" DRIVES
- COLOR MONITOR
- 512K MEMORY

Ask About Our Affordable AMIGA Financing!

GIANT SELECTION OF COMMODORE • IBM • APPLE • AMIGA

YOU MUST BRING IN THIS AD TO GET THESE PRICES A PARTIAL LIST OF AMIGA PRODUCTS:

LANGUAGES & UTILITIES

MODULA II	$89 - 1
AC/FORTRAN	27
AC/BASIC	CAL
MANX C	279-47
LATTICE C	14
LATTICE M.S. DOS CROSS COMPILER	225
LATTICE PANELS	180
LATTICE MAC LIBRARY	89
LATTICE TEXT UTILITY	69
LATTICE SCREEN EDITOR	90
LATTICE DBC III LIBRARY	134
LATTICE MAKE UTILITY	108
AMIGA PASCAL	65
AMIGA LISP	170
AMIGA MACRO ASSEMBLER	90
IBM TRANSFORMER	89
MARAUDER II	36
METASCOPE (DEBUGGER)	89
MIRROR	44
K-SEKA ASSEM	95
TRUE BASIC	135
DOS 2 DOS	50
ZING	70
1.2 UPGRADES	CALL

BUSINESS & HOME

DYNAMIC CAD (SPECIAL)	$450
DATA MAT DATA BASE	$149
GIZMOZ	45
SCRIBBLE WORD PROCESSOR	85
TEXTCRAFT	85
SPELLCRAFT	22
UNICALC SPREAD SHEET	72
VIP PROFESSIONAL	150
ANALYZE SPREAD SHEET	89
DELUXE PAINT II	100
DELUXE PRINT	72
MUSIC STUDIO	54
SONIX	CALL
DELUXE VIDEO	85
MUSIC STUDIO	54
DIGITAL LINK	55
FINANCIAL COOKBOOK	49
FLOW IDEA PROCESSOR	89
DELUXE MUSIC	80
ORGANIZE	89
SUPERBASE	140
AEGIS IMAGES	75
ON-LINE	65
BBS BULLETIN BOARD	89
CHANG LABS G.L.	95
CHANG LABS RECEIVABLE	95
CHANG LABS PAYABLE	95
AMIGA CROSS DEV.ENVRON	95
AEGIS ANIMATOR	110
INFOMINDER	85
MIAMIGA FILE II	85
MIAMIGA LEDGER	85
2 + 2 HOME MANAGEMENT	95
AEGIS DRAW	125
PRINT MASTER+	45
PAGE SETTER	120
PRO VIDEO	170

EDUCATIONAL

7 CITIES OF GOLD	$36
THE TALKING COLORING BOOK	29
MASTERTYPE	36
KIDTALK	49
SPELLER BEE	49
TYPING TUTOR	36
KEYBOARD CADET	30
DISCOVERY (MATH)	36
DISCOVERY (SPELL)	36
DISCOVERY (TRIVIA)	36
WINNIE THE POOH	22
FIRST SHAPES	45

ENTERTAINMENT

TEMPLE TRILOGY	$36
ROGUE	36
RACTER	39
MIND WALKER	44
BRATACCAS	49
MINDSHADOW	39
BORROWED TIME	39
PAWN	40
ARCHON	39
DEEP SPACE	40
ARENA	30
TASS TIMES	40
VIDEO VEGAS	30
INSTANT MUSIC	35
BARD'S TALE	40
WORLD GAMES	35
INFOCOM GAMES	CALL
HACKER II	49
DEFENDER/CROWN	44
ONE ON ONE	36
GOLDEN OLDIES	29
ARCTIC FOX	36
SKY FOX	36
DELTA PATROL	24
CHESSMASTER 2000	40
MEAN 18	35
SUPER HUEY	45
ADVEN. CONST. SET	36
FLIGHT SIM	44
ARCHON II	36
MARBLE MADNESS	36
LEADERBOARD	36
DIABLO	26
LITTLE COMP. PEOPLE	44
HEX	36
BRIDGE 4.0	26
ADVEN. CONST. SET	36
ULTIMA III	55
DEJAVU	40

BOOKS

ADVANCED BASIC	$18
KIDS & AMIGA	14
PROGRAMMERS HANDBOOK	24
AMIGA DOS REF. GUIDE	24
BEGINNERS GUIDE TO AMIGA	16
USING AMIGA DOS	12
AMIGA PROGRAMMERS GUIDE	16
AMIGA APPLICATIONS	15
ROM KERNAL (EXEC)	20
INSIDE THE AMIGA	20

HARDWARE & MISC.

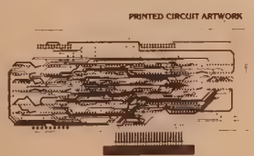
MIDI DEVICES	CALL
2 MEG BOARDS	CALL
MODEMS 1200-2400	175 Up
KURTA PENMOUSE	275
SOUND DIGITIZERS	CALL
ROLAND PLOTTER	640
T-SHIRTS	CALL
LARGE COLOR PRINTER SELECTION	CALL
STARPOINT 256K RAM	99
SONY 3.5 DISKS	30
SWEET-P PLOTTER	840

Finally, a proven CAD system for the Amiga

FROM MICRO-ILLUSIONS

DYNAMIC CAD

What AutoCAD* can do for the IBM*, Dynamic CAD can do with the Amiga... and a great deal more for less than a fourth of the price!



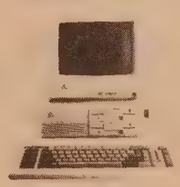
Authorized Dealer

*Gerber — trade mark of Gerber Scientific Instruments
*Leroy — trade mark of Keuffel & Esser
*IBM — trade mark of International Business Machines
*AutoCAD — trade mark of Autodesk, Inc
*Amiga — trade mark of Commodore Business Machines

Authorized

LEADING EDGE

Hardware Dealer



Dual floppy monochrome system 512K Complete . . **$1099**

Dual floppy color system 512K Complete . . **$1399**

30 Meg hard disk monochrome system 512K Complete **$1599**

30 meg hard disk color system 512K Complete **$1799**

KJ COMPUTERS

(818) 368-4122
(818) 366-5305
(818) 366-9120

10815 Zelzah Avenue, Granada Hills

Corner Chatsworth & Zelzah

FREE

COMPUTER ADVICE!

No Obligation to Buy

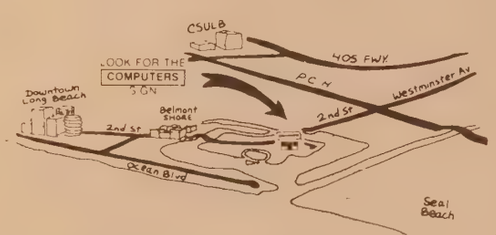
We want you to know about us and we would like to increase your familiarity with computers.

Come in and see us. We are Shore Solutions, a computer store with a relaxed atmosphere. We take great pride in assisting, educating and advising — **at no charge.**

Specializing in
IBM PC — XT — AT
and Compatible Computers

Featuring complete IBM compatible systems from $795

We are here to help. Stop by and chat with Lars, Dorian or Phil.



SHORE SOLUTIONS

We specialize in straight talk, continuous support and expandable systems.

(213) 433-6749

5836 E. 2nd St., Long Beach

awhile, then they were Data General for awhile, and then they got into CP/M and Oasis, and what happens in each country is that they gradually realize about XENIX. Then they realize that SCO is the right place to get the XENIX. So we've just had this big explosion in Venezuela. . .because *somehow the message got out!* (laughs) Because somebody customized the word processor and did the things to make it acceptable in that market.

Do you sell directly to end users or operate exclusively through your dealer channel?

DM: We do sell direct to end users. We sell at list price directly to end users. We try not to compete with our dealers, so we don't discount, we don't do anything to attract that business, but we take it. We always tell them, hey, there's a dealer near you. But it's still a young market; the dealer coverage is getting pretty good now, but when we started it wasn't. So if somebody calls up with an American Express card and wants to buy something, we'll sell it.

Do you offer support directly to end users, or do you usually work through your dealers?

DM: In the US, we don't expect a dealer or one of the smaller VARs to fully support all of our products. Every one of our boxes in the United States goes out with a 30-day hotline warranty, an 800 number to the end user. And it's fairly inexpensive to continue that as a subscription service.

In Europe we do expect that the dealers and distributors are capable of providing end user support. Because of the language and time zones, we always try to work through the dealers in the rest of the world.

In the US we talk to a substantial number of individuals, and that's good because it feeds back directly into our organization. Every release we think "What were the ten most expensive things to support in the release before?" We have this incredible vested interest in making those ten things either go away or be easier to support.

Installations are a huge percentage. In the early days we made it too hard. The PC market is an awesome thing—these machines that are supposed to be clones are really only almost-clones. We've learned the hard way that clones aren't clones, every one of them has its own thing. So now if there's anything we can do to make a product adapt itself, we'll do it.

One of the amazing things that we've accomplished with XENIX is that at this point you take it out of the box and load it onto anything that vaguely resembles an AT, and it just sort of gloms in there and pokes around and says, oh yeah, that's a Hercules monitor and an Arkive tape drive, and when you boot up XENIX it comes up and it says, you've got a Hercules monitor and an Arkive tape drive and a parallel port and two serial ports and eight megabytes of memory . . .

Larry Michels: "It isn't a matter of moving in a machine to make an existing business easier to run, but rather designing businesses that work around these machines. You're not selling the machine, you're selling a solution, the answer to a problem."

LM: The investment just keeps adding to it. It's one of the nice things about the market, because you can pioneer the market, develop the market, and get the benefits. It becomes very difficult for somebody else to try and jump in.

Between development work, the operating system, the communication level, the human interface level, the database level—it's a hell of a

LEADING EDGE*

EPSON
Equity II
also in stock
I & III

Free Printer

We'll BEAT ANY PRICE!

IN STOCK

MODEL "D"™

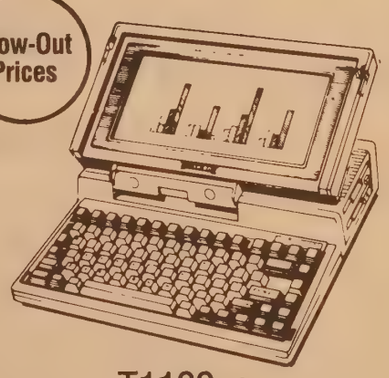
From $995

1200 Baud Modem $135
2400 Baud Modem $275

ENORMOUS QUANTITY

TOSHIBA
TOSHIBA LAPTOPS

Blow-Out Prices



T1100 +
T3100

TOSHIBA PRINTERS
321, 351
Available

IN STOCK

BEST SUPPORT, LOWEST PRICES, AND THE FINEST PERSONNEL!

(* The only Dealer operated by the Former Exec. V.P. of Leading Edge R & D)

CompuStart
THE ULTIMATE COMPUTER STORE

2110 Wilshire Blvd., Santa Monica
(21st & Wilshire) Parking in Rear
Mon. - Sat. 10-6 Financing Available

Leading Edge and Model "D" are registered trademarks of Leading Edge Products, Inc.

(213)
829-2085

team that makes this all work. That's why the UK acquisition was so beautiful, because it gave us the only remaining capability out there that could have fit like a glove.

Do you develop all your software in-house?

LM: We use combinations. Some of it's developed in-house, some of it is team developed. More and more software developers are understanding that they can't outreach this market. It's sort of like being the producer of the show and the best way to get marketing is to go to CBS. So you often get the opportunity of picking up products.

The question then is, does the product meet our own requirements, does it do what we want it to do? It generally takes further investment on our part. The product we deliver has the flavor and look of an SCO product. Very often we do the documentation for it, the handbooks and user manuals.

How is the XENIX product itself continuing its development? Is most of the work going on here or at Microsoft?

DM: We've been doing joint development on XENIX with Microsoft since the very first version of XENIX on the PDP-11 five years ago. Over the history of XENIX we've probably done 50% of all the work. If you combine what we've done and what the group we've acquired in England has done, it's probably higher than that.

We build the product we ship. We give whatever we did back to Microsoft, and it generally ends up in the next major XENIX release.

How do you decide what you need to develop?

DM: We talk to our support team, we talk to our VARs, we talk to our OEM sales department, we hold lots of meetings and write lots of specs. We're on the verge of releasing a fairly major release in January; it's got a heavy emphasis on international features like the 8-bit character sets. It's got a heavy emphasis on supporting some new devices—there's a big push for tape devices which were never officially supported before. The 150 megabyte disk floppies are really difficult media to do daily backups on. So the market said, we want tape, and we said, ok, it's getting too confusing, there's too many vendors out there with dissimilar tape drivers, so let's standardize that.

So it's really an iterative process. Every release we make a long list of the things we'd like to do, then we prioritize it and decide how long we've got till we're going to put out the next release and how far down the list we can get. But the first thing on the list is always "What is causing the users the most trouble? Where is the support dollar going?" Because unlike most companies, we talk to the end users. It's an immediate

Debunking The DOS Vs. UNIX Myth And Other Popular Fallacies

Bruce Steinberg: "UNIX is not out to do in DOS. It's there to work with it. XENIX and DOS have always coexisted."

"There's a few issues that I think of in terms of *National Enquirer* headlines," remarks Bruce Steinberg, SCO's director of marketing communications. "'Who's Going To Win The Battle Of DOS Vs. UNIX?' 'Who's Going To Win The Battle Of Multi-User Vs. LAN?' 'Who's Going To Win The Battle Of Mainframe Vs. PC?' It's almost an editorial lead that says if there's a winner there's got to be a loser.

"There doesn't have to be a loser if somebody wins. If somebody wins, somebody else wins too. That's good negotiation, it's good technology. The only thing that loses is inefficiency, low productivity. UNIX is not out to do in DOS. It's there to work with it. XENIX and DOS have always coexisted. They have a common genealogy, they have a common vendor in Microsoft."

It's Steinberg's appointed task to present SCO's products and services to the business community. He's the creator of the company's visually arresting ads, with striking artwork showing XENIX rising over the earth or freeway signs pointing to UNIX Solutions. And he's the first to point out that SCO is at least as much a philosophy as a product line. "The results of buying an operating system, and the results of buying into a long-term working relationship with a software vendor, are almost indeterminate up front. It's an act of faith, and faith coupled with reason is what's going to get over in the long run, in terms of working with people. We've always paid attention to support. You let people know that you're aware—we know what you need, and now we're going to provide it."

Presenting the true effectiveness and versatility of SCO's XENIX frequently involves debunking commonly-held myths and rivalries, then pointing out that it's possible to enjoy the best of several worlds while getting the job done efficiently. "Multi-user and LAN is a classic dichotomy," he says. "You have to pick one or the other. You either have to go multiuser, and here's all the good news and the bad news about that, or you've got to go networking, and here's all the good news and the bad news about that. I say, wait a minute, no. With XENIX-Net, you don't have to make that choice. You can have networking of multi-user systems and get the best of both without sacrificing the strengths of either.

"Same thing with PC and mainframe. Somebody comes up with the idea of an SNA 3270 PC—you can put PCs on desks and you can give them SNA protocol and they can talk to mainframes. We have this facility called reverse passthrough on our SNA product, where a mainframe administrator can make his mainframe look and act like a PC for the purpose of communicating with PCs. And conversely we have a programmatic interface on SNA that can make a PC look and act like a mainframe." SCO has recently ported the Microsoft C compiler, *SCO Professional* (a XENIX-based *1-2-3* workalike) and the *Lyrix* word processor to the VAX environment—prompting Steinberg to coin the slogan "Take your VAX where no VAX has gone before..."

"Rather than say it's Us Vs. Them, I look at it that we're all in this together. Because it's ridiculous—the definitions break down anyway. The 386 machine has the power that mainframes had a couple of years ago. Sitting on your desk—virtual memory, four-gigabyte linear address space—where do the definitions stop and start anymore? It's all about computers—it's all about bits and bytes."

As the distinctions between machine types continues to blur, XENIX offers the significant advantage of being able to tap the increased power of the new micros far more effectively than any current version of DOS. "You can take 286 code and run it on a 386 machine straight out of the box and it'll run three or four times faster. You can take a 386 machine, run 286 XENIX and 286 applications, and they'll run three or four times faster. You can take a 386, run 286 XENIX on it, and compile the 286 applications for the 386, and run three times faster again. And if you take those 386 recompiled apps, and run them on a 386 kernel on a 386 machine, you're talking 30 times faster. And we've guaranteed this upward compatibility so that you'll always preserve your investment from where you're coming from."

However, says Steinberg, the primary issue is less a matter of one operating system being superior to the other than of their ability to work together to enhance productivity. He points out, for instance, that DOS-based vertical market applications will probably continue to dominate their particular arenas for some time to come, and the ability of XENIX to provide multi-user features without sacrificing DOS capability is a significant benefit. Then there's the undeniable advantage that an entry-level PC system can evolve as a company's needs change. "There's a tenuous balance between the need for PCs to be perceived as DOS, so there's an entry-level position, but also as a good XENIX machine, if you want that capability. If you're enough on the leading edge to understand what XENIX can do for you, you have it primarily as a XENIX machine, but it'll still run DOS programs.

"Particularly the 386 was just made for UNIX—it's like an engine that's so powerful that you're not even beginning to open it up with DOS. It's kind of like having a Lamborghini and going to the supermarket. Occasionally you have to go to the supermarket. You'd be in trouble if you had a car that stalled if you had to drive it under 70 miles an hour. A good car that does 170 should be able to get you across town." (The Santa Cruz Operation, P.O. Box 1900, Santa Cruz, CA 95061, 408/425-7222)

Best New Year Buys

From Your PARTNERS in Business COMPUTING

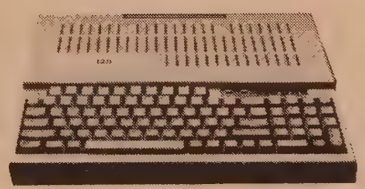
Complete Desktop Publishing System

includes:
- Taxan EGA Monitor
- Laser Printer
- AT Compatible Computer w/ 1 MB, 6/8 MHz Switchable, 20 MB Internal Hard Disk, 1.2 MB/360K Floppy
- PageSet Software
- OCR Scanner

JUST

$265 per month*

OAC
*Approximate cost per month based on 10% simple interest for 36 months. Actual price and terms vary and depend on financial condition of purchaser.



LASER 128™

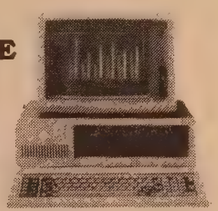
- **Best of Apple IIe & IIc**
- **Half the Price of reg. Apple**
- 128K
- 40/80 column card
- RGB Port
- Game Port
- Expansion slot
- One Floppy Drive
- Modem Port
- Serial/parallel port
- **A complete Apple II in a clone**

ONLY

$395

Ideal for Children and Educators

IBM PC/XT COMPATIBLE "Euro PC"



$900

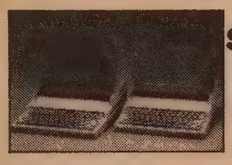
- 256K RAM
- Serial/Parallel/Game Ports
- Clock/Calendar
- 1 DS/DD Disk Drive
- Metal Case w/speaker
- 135 Watt power supply
- Keyboard
- TTL Hi-Res mono monitor (amber/green)
- Hercules compatible graphics card
- 20MB Hard Disk or backup tape drive (opt.)
- 640K
- 2 Drives

(with 2 Disk Drives—$850)

Your Basic Starter System

DATA GENERAL ONE™

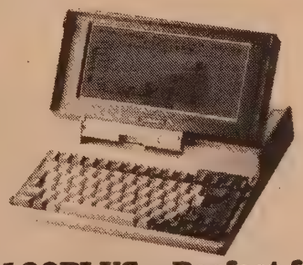
The All Around Laptop for the Traveling Executive



$1795
(w/2 Floppies)
NOW GET ONE FLOPPY FREE!!

- 25x80 screen
- enhanced LCD
- 256K RAM exp. to 640K
- Built-in 3.5" disk drive (2nd opt.)
- 10 MB Hard Drive
- IBM PC compatible
- Runs MS-DOS
- 8087 Math co-proc. opt.
- Rechargeable battery pack
- Two I/O expansion card slots
- Parallel printer interface
- Serial port w/RS 232 interface

THE TOSHIBA LAPTOPS



T1100PLUS—Perfect for the on-the-road salesman
- MS-DOS 2.11 *640K Memory
- Two 3.5" Drives (720K)
- LCD Display (80x25)
- Standard interfaces (fully IBM compatible I/O bus)
- Battery or AC operated
- Weighs less than 10 lbs.
- Optional automobile power adapter

T3100—For the Executive
- MS-DOS
- 80286 Microprocessor
- 640K exp. to 2.6 MB
- 1—10MB Hard Drive
- 1—720K 3.5" Floppy
- Gas plasma screen
- RGB monitor, parallel printer, RS 232C, external 5¼" drive ports
- Less than 15 lbs.
- 110/220 VAC Switchable power operation
- Internal 300/1200 bps Hayes modem (opt.)
- External 5.25" disk drive (opt.)
- Floppy link to PC diskette drive (opt.)

Call For Details and Best Price

Come in and visit our showroom.
Hours: 10-6 Weekdays
11-5 Saturday
Sunday by appt.

Computer Partners

Communications • Networking software • MAC servers

10356 Beach Blvd. Stanton, CA 90680

(714) 826-9190

Novell Netware • Desktop Publishing • LAN's • Communications

DISK COPIER

Fast (one minute)
Simple (one button)
Reliable (one board)
$995 (one price)

RECORTEC

275 Santa Ana Ct., Sunnyvale, CA 94086
(408) 737-8441

Win a 20Meg Hard Card Join the Club and $AVE INSTANT CREDIT

The newest concept in **SAVING MONEY**. By joining our club, we will give the **first 200 NEW** members the following special offer:

- Over 500 FREE programs
- You will never pay more than 10% over our cost
- If you use a MasterCard, Visa, American Express or Diners Club to sign you are given a credit limit up to 500 dollars with us. This will enable you to make a purchase and have up to **6 months to repay at NO INTEREST.**

To start saving MONEY on all your computer needs complete the enrollment form below and send it to:

Valley Systems Software Inc.
Enrollment Department
14088 Fanton Lane
Sylmar, California 91342-1655

For Credit Cards ONLY call collect (818) 362-6227

THREE YEAR MEMBERSHIPS WILL RECEIVE 200 FREE PROGRAMS EACH YEAR!!!

The yearly Fee is $50.00: and you have a complete thirty day money back guarantee.

___ 1 YEAR $50 ___ 2 YEARS $90 ___ 3 YEARS $110
☐ MasterCard ☐ Visa ☐ American Express ☐ Diners
☐ Check
Card Number: _____ Expires: _____
Name: _____ Date ____-____-____
Address: _____
City: _____ State: _____ Zip Code: _____
Day Phone: (_____) _____-____ Evening: (_____) _____-____
Signature: _____
required for all credit card memberships Contest entry exp 3/31/87

payback—if we solve a problem, if we cut down one phone call per user, that's a huge thing. So if it means improve the documentation, if it means improve the installation procedure, if it makes the product more automatic in recognizing the machine it was just poured into, then that's all stuff we have to do.

LM: We also like to listen to the propositions that there is this enormous market here if the product had this one additional feature. . .(laughs) So we sometimes deal with the one additional feature.

As a matter of style, if we want XENIX to lead, and we want SCO to lead, there's a strong concern about how you interface with the rest of the industry. We try to keep as open a door as we can to the independent hardware vendor, to help them interface their hardware to our products. Some is done for free, some is done for charge, it depends on the importance of the product and the amount of help that's required.

The same thing is true of the independent software vendor, even to the extent of competitive products. There may be competitive applications out there, that they need help in interfacing to our operating system. And it's perfectly legitimate, you just have to do that, it's part of the game. The customer wants their product, but they still want our operating system. And so you have to step away from your own products, and offer that kind of freedom.

DM: Also, as we get into things like XENIX-Net, which is bringing together DOS and XENIX systems, there's a lot of players. We have active relationships with Excelan, 3Com, etc., to make the various networking systems compatible with XENIX. We're getting very good cooperation because the networking vendors realize that XENIX is important in the networking strategy. They realize that if SCO says that theirs is one of the five cards that works in a XENIX-DOS mixed environment, that's good. And so they're willing to send engineers over here to live with us and work cooperatively on making the product fit their architecture as well as ours.

We've had a lot of pressure from the federal market, which needs removable media for security reasons. We just announced at UNIX Expo a relationship with Iomega to support and actually deliver XENIX on a cartridge. You can buy a 20 megabyte cartridge which has XENIX pre-installed, you pop it in and you're running XENIX. Iomega made special arrangements for us to get cartridges and duplicating equipment so that we could offer XENIX on a cartridge.

So we're constantly working, listening, entertaining these propositions. The discussions with Iomega have gone on for a year and a half to finally get to the point of being able to ship a cartridge with XENIX.

So the cartridge would be installed in a regular DOS machine and you could just switch between operating systems?

DM: Sure. You put in a XENIX cartridge, you're running XENIX. You put in a DOS cartridge and you're running DOS. And if you want to take the thing and lock it in the vault, because it's got secure data on it, you can take it to the vault and lock it—which is required by law on a lot of projects. It's either lock the whole AT in the vault or lock the cartridge. So the cartridge looks like a good solution.

Are we likely to see XENIX on a CD-ROM anytime in the near future?

DM: I wouldn't look to see XENIX on the ROM. I would look to see XENIX able to access the ROMs. I think that because of XENIX's natural role as a server in a network, that if I want to put a gigabyte of online data available to 100 DOS machines and terminals and telephone lines, that the obvious place to stick that is on a XENIX box. I expect that we'll see device drivers that talk to CD-ROMs.

There wouldn't be any great advantage to putting XENIX on the ROM. The CD-ROMs are way too slow to run XENIX effectively. But to access the databases that will begin to be available, it makes perfect sense.

We've started to explore that. We went to the first CD-ROM conference, and we're trying to understand where that's going. But XENIX really needs read-write capability.

What kind of doors do you see the 386 machines opening for SCO?

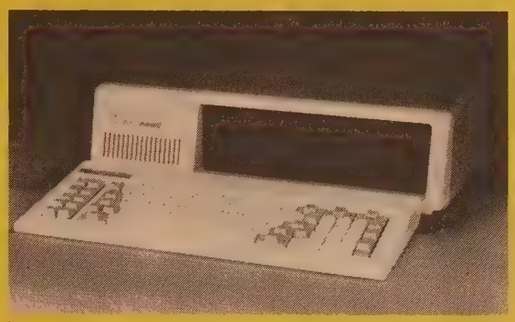
LM: The focus that we see is really a focus of machines doing work. It isn't a matter of moving in a machine to make an existing business easier to run, but rather designing businesses that work around these machines. And the 386 just gives you the power to do that. It allows the work group to be larger. It allows what the machine can do to be larger. It does it all, without adding any real cost to the system. You're buying the workhorse; you're buying, if you will, the horsepower to do a given task in a given work environment.

What we're seeing is a move toward solution selling. You're not selling the machine, you're selling a solution, the answer to a problem, be it communication or office productivity or the sharing of certain information or the flow of money or what have you. The 386 is simply that—more and more power. As the next generations come along, they just do more.

SCO once had a version of XENIX on the Lisa, on a 68000-based PC. Since both Amiga and Atari have entered the market with 68000-based machines and Apple's beefed up the Macintosh line, do you think there'll be much of a market for XENIX on these machines, or do you think it'll stay primarily an Intel-oriented product?

LM: Clearly there will be a move

ADDA XT BASIC UNIT



- 135 Watts UL Approved Power Supply
- 640K On Board Memory
- AT Style Keyboard
- IBM XT Compatible
- 8 IBM Compatible Expansion Slots
- 1 Year Warranty
- 4 Layer Motherboard

MODEL I
4.77MHz
Same Speed as IBM PC/XT
$375.00

MODEL II
4.77 / 8MHz
3 Times Faster than PC/XT
$445.00

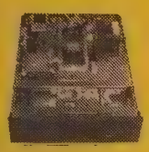
MODEL III
4.77 / 10MHz
3.7 Times Faster than PC/XT
$495.00

FLOPPY DISK CONTROLLER

- Supports 2 IBM PC/XT Compatible 360K Drives
- Short Card

$29.00

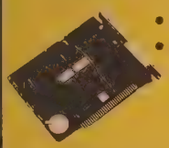
FLOPPY DRIVE



- 360K Format DS/DD Drive
- IBM PC/XT Compatible
- Half Height

$89.00

MINI I/O CARD



- Par, 1 Ser/Game Ports & Clk Cal
- 4x4 Short Slot
- IBM PC Compat
- w/Ramdisk, Print Spooler & other utilities & cables

$89.00

HARD DISK CONTROL'R

- Controller for 5, 10, 20 and 33Mb Hard Disks
- IBM PC/XT Hard Disk Controller Compatible

$99.00

HARD DISK DRIVE

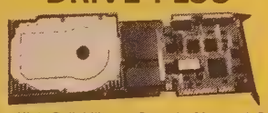
20Mb Hard Disk
- 3½" Shock Mounted
- Speed 65mS
- ½ Height

$299.00

30Mb Hard Disk
- Full Height - 45mS

$499.00

DRIVE PLUS



- High Reliability • Base Is Mounted On Controller Card • Fits One Disk Drive Slot • Saves Space • Easy Installation • Auto Boot

$449.00

ADDA MODEM

Compatibility:	Bell 103 & 212A
Speed:	0-300 & 1200 BPS
Duplex Mode:	Full or Half Duplex
Bust Redial:	Auto Busy Redial
Data Format:	7 or 8 Bit ASCII
Parity Format:	Even, Odd or None
Port Adapt:	Com 1 or Com 2

Internal $119.00 **External** $129.00

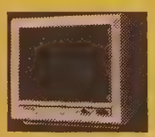
TAXAN EGA MONITOR

- 640 x 350 Resolution
- 640 x 200 Resolution
- EGA and CGA Mode
- Amber and Green Text Switch

$465

TAXAN EGA autoswitch card $250.00
Special Package Price for monitor and card $695

TAXAN 650/635



$Call

- 12" CRT w/.28 mm (640) or .37 (630) Dot Pitch • Ultra High Res(720x400) • Text Color Switchable Green/Amber/White Reverse/White on Blue • Includes Cables

TAXAN 555 Clr/Graph $Call
TAXAN GOLD COLOR $375
SIGMA Color 400 $395

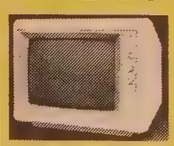
TAXAN 720

$Call

- Taxan High Quality
- Text Switchable Green & Amber and White and Green Reverse
- 12" Dot In Line (640 x 262)
- RGB/TTL Pos
- Includes Cables

COLOR CARD $89.00

TTL MONITOR



- 12" Clear Green Monochrome Screen
- TTL Input
- Includes Cables

$89.00

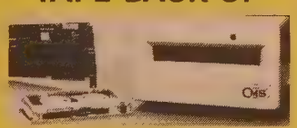
MONO GRAPHIC CARD $89.00

UNINTERRUPTABLE POWER SUPPLY

- Power Failure Interrupt Signal to Computer
- Back-up Power for 15 Min
- Noise Surpression
- Surge Protection
- 250 Watt Output

$199.00

TAPE BACK-UP



- 60Mb Ext. Tape Back-Up Sys
- Self-Contained & Menu Driven
- Image & File by File Back-Up
- PC, XT, AT and Compatibles
- QIC Data Format

$699.00

132 COLUMN PRINTER

- 200 CPS
- Near Letter Quality Mode
- Epson 286 Compatible
- Tractor & Friction

$399.00

2Mb RAM BOARD

- 0K Expandable to 2Mb
- Supports EMS Standard
- Works with Lotus Release 2 etc.
- Test w/8MHz CPU

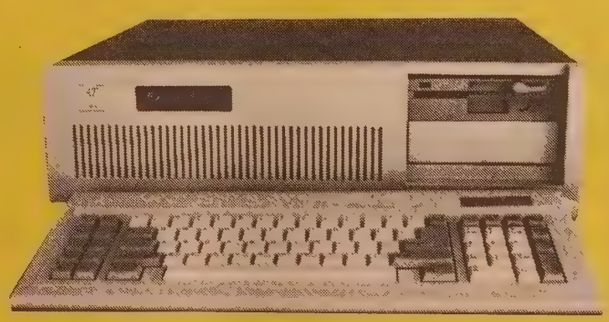
XT $149.00 **AT** $169.00
D-RAM 41256 $3.00 ea.

ACCESSORIES

Panasonic 1091	$249.00
Printer Cable	15.00
RS232 Cable	15.00
8087	$Call
80287	$Call
Mouse	$Call
MS DOS 3.1	40.00
MS DOS 3.2 with GW Basic	80.00

ADDA AT BASIC UNIT

Watch for NEW 6/10 MHZ!!!



- 200 Watt Power Supply
- 640K On Board Memory (expandable to 1 MEG)
- AT Style Keyboard
- IBM AT Compatible
- 8 Expansion Slots
- 1 Year Warrany
- 8087 Optional Socket

ADDA Price . . . Only $895.00

AT FLOPPY & HARD DISK CONTROLLER

- AT Compatible Floppy and Hard Disk Controller
- Supports 2 Floppy (360K or 1.2Mb) & 2 Hard Disks

$199.00

½ HIGH FLOPPY

- Includes Bracket to Fit PC/AT
- Grey Face Panel
- Highly Reliable
- IBM PC/AT Compatible

360K $99.00 1.2Mb $149.00

AT HARD DISK

- Full Height
- High Performance - 45mS

20 Mb Hard Disk	$399
30 Mb Hard Disk	$499
40 Mb Hard Disk	$625

MINI I/O CARD

- Parallel & 1 Serial/Game Port • Floppy Drive Contrl, IBM AT Comp. • w/Ramdisk, Printspooler and other Utilities • Incl Cables

$89.00

MULTI-FUNCTION SUPER AT CARD

- Serial Port • Parallel Port
- 3Mb Expandable
- MF-3001 w/0K

$199.00

APPLE DRIVE

Macintosh
2nd external drive

CALL

Apple IIe & IIc
floppy drives

CALL

Prices quoted above do not include UPS shipment charges. Prices subject to change without notice. California residents add 6½% sales tax. Mastercard or Visa add 3%.
Business hours:
Mon.-Sat.
8:30am-5:30pm
TAXAN is a registered trademark of TAXAN Corp.
IBM PC is a registered trademark of IBM Corp.

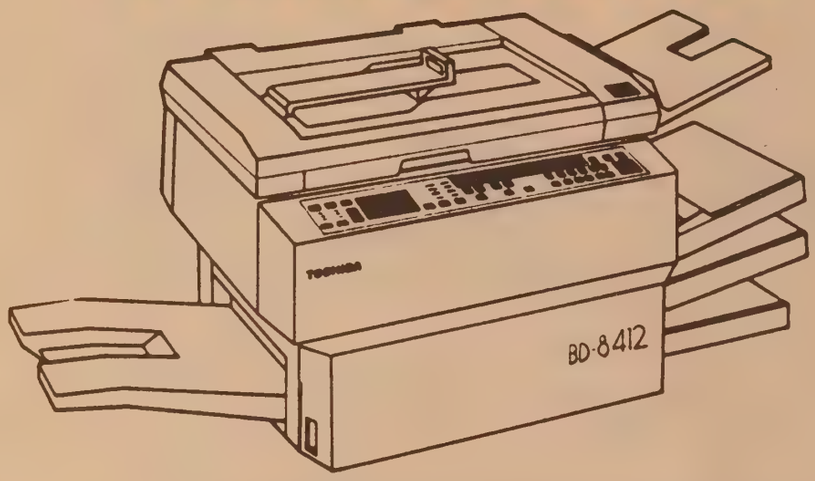
Happy New Year from

©1986, American Digital Discount Association

AMERICAN DIGITAL DISCOUNT ASSOCIATION, INC.
4040 SPENCER STREET, SUITE M
TORRANCE, CALIFORNIA 90503
TELEPHONE: (213) 542-3578

GET A FREE TRIP TO HAWAII

When you buy a Toshiba copier from us!!*



TOSHIBA BD-8412
- Auto Duplexing
- Auto Document Feeder
- Dual Page Copying
- Auto Exposure
- Push Button Color Change
- Auto Reduction and Enlargement

5 YEAR BUYER PROTECTION PLAN

Anyone can sell you a Copier . . .
at Precision Images, We sell
you a Company!!

CUSTOMER RELATIONS AND SUPPORT

Introductory Offer

FREE TRIP TO HAWAII

with Purchase of a TOSHIBA BD-8412 copier — THE MASTER PERFORMER*

AUTHORIZED TOSHIBA DEALER

PRECISION IMAGES

Business Machine Co.
5412 Wilshire Blvd
Los Angeles, Calif. 90036

(213) 857-1222

** INCLUDES: Airfare and Accommodations
Offer Ends February 15th, 1987

back; I think there'll be a move back even within Apple. The issue of the Atari and the other small 68000 machines being single-user is probably not real. I don't see any reason at all why UNIX will not come in.

The question that really has to be answered is the difference in the market between the tinkerer-hobbyist and the business environment. Will people invest in putting business systems on those machines? Would there be any real advantage in putting them into office environments? The problem you have is that somebody has to take the investment we've made, then use that investment to make another investment to make these machines do the work. That could be the internal VAR in a large corporation, or the external VAR. The VAR has to be convinced that there's a real advantage to doing so. The cost of the machine is not generally an overriding concern in the total investment.

In the past year we've seen a lot of price-cutting forms of UNIX. We've seen Microport come out as a rock-bottom cost UNIX system. Do you think that SCO would ever sell a product like Microport?

LM: You have to ask yourself, what is Microport selling? First, they're not selling any heavy investment in the product, because the investment was made largely through the work that was done by DRI and funded largely by Intel and AT&T. They took the product and simply said, we have royalties on a product, we'll take that product and move it out.

Because it's an established market, because XENIX is the established product, they'll do, in Microport's own words, a Borland strategy. This is hard to compute. The Borland strategy was in a high-volume market that was clearly elastic. Cutting the price produced more volume. The Microport market appears to be the UNIX hacker, the UNIX guru who is willing to buy something cheap and doesn't really much care about the value-added that SCO brings in with its applications. You clearly cannot support the infrastructure and R&D and all that the market is asking for on the price structure that Microport is using. Consequently, I think we're seeing a hacker's product.

When we first brought out the 8086 products, we were confronted by unrealistic pricing that IBM had done. They had priced the product at $395, which just wasn't adequate to provide the margins you needed to being the product to market and at the same time fund the development work. Even at that point our wisdom said no price of $395 could support a viable business. And so our first product coming out against IBM was a $495 product.

DM: IBM eventually raised the price to $595.

LM: And even at $595, given the margins, given the royalties you have to pay AT&T for a product, and given the kinds of discounts that permeate the various chains, given the real cost of delivering the product, you're just barely at the right price there.

Doug Michels: "We certainly don't advocate that there's a XENIX vs. DOS argument. DOS is a fine operating system. But if your goal is to run a four-user accounting department, you'd be crazy not to buy XENIX."

Along comes a Microport, saying I'm going to do the same thing for $169—he's got a mail-order product. He can't support dealers, he can't support advertising costs. There's just no way you can build a business based on that and deliver a quality product. We're supplying a major engineering department here, now 125 people. Somebody has to pay that bill. It has to come out of the products that we're doing. And so it just doesn't make any sense. I believe what we're seeing is a philosophy that says if we didn't price it cheap it wouldn't sell; if we price it cheap it'll sell, and that'll give us time to figure out what to do.

DM: Even if you look at the products that Microport sells with its UNIX, the word processors, spreadsheets, databases that they've designed, they're selling them at four times the price of the operating system. They're operating off of an anomaly in the AT&T pricing that they were able to take advantage of, because—as they advertise—they're the same people who used to work for DRI, who did the port. And so DRI paid them to come up to speed, to learn the product, to do the port, with Intel and AT&T money. They've taken advantage of that, used the AT&T royalty structure, and are selling the thing at a very low margin.

That's fine, but what happens when the 386 comes out and they're not the guys who are doing the port for AT&T? They've got to take whatever the port is, learn it, adapt it, and do all that other stuff.

LM: Furthermore, if you look at the product they're selling, it is not a comparable product. It is much less refined. It is really not a satisfactory multi-user product.

Is it correct that Microport has never been object-code compatible with XENIX?

DM: They did claim compatibility

REASONABLE PRICES & 6 MONTHS WARRANTY

HARD DRIVES
12 MB Full Height $145
12 MB ½ Height 175
20 MB ½ Height 325
40 MB Full Height 595
86 MB F.H. 30 MS 1195
Omti HD Controller 119

MISC.
5¼ Floppy Drives $75
3½ SS/DD Floppy Drive 30
Flip top & Slide Off Cases for IBM™ 39
TTL Amber Monitor 89
AT Style Keyboard 69
Sumagraphics Bit Pad 1 . . . 249

IBM™ COMPATIBLE MOTHERBOARDS
XT 640K $118
XT 8MHz Turbo 139
AT Comp. 6/8MHz [0K] Exp to 1 MB 595

CARDS FOR IBM™
Mono-Graphics Card Hercules Comp. $82
Color Graphics Card Hercules Comp 72
Multi I/O + 2 Fl./Controller . . 89
Parallel Port Adapter 29
Serial Port Adapter 39
Floppy Controller/w/Cables. . . 35
Chorus Data Systems
PC Eye Video Capture Board 699

D-RAMS
64K . . . 89¢
256K . . 2.39
MATH PROCESSORS
CALL
For Best Price

EPROMS
2716 . . . $2.00
2732 . . . 2.20
2764 . . . 2.25
27128 . . . 2.75
27256 . . . 5.50

Call For Quotes
On Complete Systems!
Dealer Inquiries Invited
Our Complete Systems
Are FCC Approved

PARAMOUNT ELECTRONICS
639 E. Arques Ave.
Sunnyvale, Ca. 94086
(408) 773-9595
We Service & Repair IBM™ & Compatible Computers

MicroCom Systems
OUTSTANDING SOFTWARE
For IBM PC's and Compatibles

$3.50 PER DISK SMALL QUANTITIES — **$3.00 PER DISK** FOR TEN OR MORE
$1 OFF 5 DISKS OR MORE WITH THIS COUPON

☐ **CAD 1** Altamira, an object oriented CAD program, and Supergraph 3
☐ **COMM 3** Communications utilities to be used with QMODEM or PROCOMM
☐ **DATABASE 3** — The Pbase relational database manager with query language
☒ **FINANCE 1,2** – (2 items) PC-Accountant and a personal finance manager
☐ **GAMES 1** — Chess, 3-D Packman, Kong, Spaceware, Janitjoe, and more Graphics
☐ **GAMES 2** — Qubert, Pango, Centipede, Monopoly, Zoarre, and more. Graphics
☐ **GAMES 3** — Blackjack (you set rules), Arm Chair QB, and Empire (war game)
☐ **GAMES 4** — Star Trek, the original Collossal Caves ADVENTURE, and Castle
☐ **GAMES 5** — The HACK adventure game from the universities Like Rogue
☐ **GAMES 6** — Pinball, Othello, Dragons, Sopwith (fly one), and more Graphics
☐ **GAMES 7** — Round42 (16 color graphics), Backgammon, Risk, and more Graphics
☐ **LANGUAGE 2** — The renowned SMALL-C compiler and a C interpreter!
☐ **LANGUAGE 3** — 8086/8088 assembler, disassembler, and tutorials
☐ **LANGUAGE 4** — 370 assembler language on the PC! A must for 370 users
☐ **LANGUAGE 5** — Turbo Pascal interactive debug, pop-up help, formatters, etc
☐ **MUSIC 1** — Many clever tunes, and an excellent color graphics music editor
☐ **ORGANIZER 1** — DESKMATE, a sidekick clone, and the JUDY calendar program
☐ **ORGANIZER 2** — Project management using critical path scheduling
☐ **ORGANIZER 3** - The PC-OUTLINE windowing outline editor
☐ **PICTURES 1** From Vader to Snoopy, char graphics pictures for your printer
☐ **PICTURES 2** High res digitized color graphics pictures Graphics req
☐ **PINUP 2** Provocative high res digitized color graphics pinups Graphics req
☐ **PRINTER 1** The complete printer kit spoolers, banner makers, and more
☐ **SPREAD 1** The PC-CALC spreadsheet program
☐ **UNIX 1** A Unix command shell and various Unix commands for DOS
☐ **UTILITIES 1** A collection of invaluable general purpose DOS utilities
☐ **UTILITIES 2** More invaluable general purpose utilities including NEWKEY
☐ **UTILITIES 3** A comprehensive set of debugging and diagnostic utilities
☐ **UTILITIES 4** Ultra File Utilities: like Norton Utilities for diskettes
☐ **WORD 2** - Waterloo Script (like IBM's SCRIPT) text formatter for the PC

— NEW (LATEST) RELEASES —

☐ **COMM 1** — The ever popular QMODEM 2.0E modem communications program
☐ **COMM 2** — PROCOMM 2.3, an excellent modem program with terminal emulation
☒ **COMM 4,5,6,7** — (4 items) Latest RBBS Bulletin Board System 14.1A
☒ **DATABASE 1,2** – (2 items) File Express 3.7 menu driven database manager
☐ **EDUCATION 1** — Interactive DOS tutorial for new PC users
☐ **LANGUAGE 1** — The artificial intelligence languages LISP (XLISP 1.6) and PROLOG
☐ **LANGUAGE 7** — Pascal interpreter Great for learning/debugging Pascal
☐ **WORD 1** — PC-WRITE 2.6, a powerful complete word processing system
☐ **WORD 3** — The PC STYLE writing style analysis program

Cost of Disks _____
CA Res 7% Tax _____
Ship/Handling _____ $1.00
Total Enclosed _____

MicroCom Systems
P.O. Box 51657, Palo Alto, CA 94303

Show Specials For Dealers $255 the CTX Color Monitor will really open your eyes!

CTX 1410
- IBM standard 640 x 200
- green/amber text switch
- anti-glare
- RGB Color Monitor

Power supply for AT
200 W
UL Approved **$78.00**

FREE TTL MONITOR
WITH CTX CAD/CAM COMBO
CTX 1424 Hi-Res RGB
Sigma Designs New Color 400
Retails over $1400
ONLY $749.00

OEM/Distributor/Dealer inquiries welcome

CTX International, Inc.
20768 Carrey Rd.
Walnut, CA 91789
(714) 595-6146

$699 Complete

IBM PC/XT COMPATIBLE SYSTEM INCLUDES:

- Mother Board w/256KB & 8 Expansion Slots
- 2 360KB Disk Drives w/controller
- Hi-Res TTL Monochrome Monitor
- Monochrome Card
- Serial/Parallel/Game Port
- Calendar/Clock
- 5150 Type Keyboard
- 135W Power Supply
- Flip Top Case

For Turbo (4.77-8mhz) on above system ..... add $35

P C P E R I P H E R A L S

384KB Multifunction Card w/OKB	$104
Serial/Parallel/Game/Calendar-Clock	$85
Serial Port w/Calendar-Clock	$60
Serial/Parallel Port	$55
CITIZEN MSP-10 Printer	$299
300/1200 Baud Modem	$160

ALL ITEMS INCLUDE A 6 MONTH WARRANTY

CALIFORNIA
COMPUTER EXCHANGE
12101 Venice Blvd.
W. Los Angeles 90066
(213) 397-3659

Cashier's Check or Money Order Only
Cal. Residents add 6.5% Sales Tax
Open 12-5 PM
Mon-Sat

early on. They retracted that. That was an error in judgment. It's technologically very difficult. It's technologically practically impossible without proprietary knowledge. So there's two questions. One is, is it worth the investment to do it, and two is, if they did it, given that some of their employees had proprietary knowledge, would that be a problem? And all in all, I think wisdom won over.

They acknowledged, I think quite rightly, that in order to sell the UNIX you'd have to have applications. The applications base is built around XENIX. We worked very hard to get the applications base built around XENIX. And therefore, from a strategy of competing with XENIX, XENIX binary compatibility was very important. It just turns out to be very expensive.

It also turns out that, as time changes, XENIX is evolving. So not only is it expensive once, it's expensive for a long time. And so, even though from a marketing point of view it was a desirable goal, it wasn't within the scope of what they could do.

The effect is that currently we're not seeing Microport take away any significant amount of business away from us. If they're getting other business, it's business that couldn't afford XENIX, wasn't a customer for XENIX in the first place. I don't know how much business they're doing, but it doesn't seem to be our business.

I suspect, if anything, that they might be doing us a lot of good, because if they take the people that aren't willing to spend the money to buy XENIX in the first place, they may learn enough about UNIX to decide they want to go to a professional level. It's a lot like Nikon cameras—do you want the professional-grade product, or do you want the stuff for the consumer?

It's a concern, because it confuses the marketplace; it's not really a concern because it's impacting the marketplace.

The other side of that coin, and something that we are looking at, is that AT&T has made it somewhat more attractive to sell a version of UNIX restricted to two users, which is what Microport has done. They get part of their price differential by no R&D. They get part of their differential by no dealer discounting or limited dealer discounting. And they get part of their price differential by using the two-user license.

What we haven't yet really determined, and we're actively looking at, is whether there's a market for two-user XENIX. It's clear that the bulk of our market is people trying to build multi-user systems, and therefore the two-user product's of no interest. On the other hand, if somebody simply needs to replace DOS with something that can address eight megabytes of memory properly, the two-user version might be appropriate. And so to the extent that we can identify a market for a two-user restricted version of XENIX, we may very well use the lower-priced AT&T structure to offer a lower-priced version of XENIX with that restriction.

Who should be using XENIX?

DM: We certainly don't advocate that there's a XENIX vs. DOS argument. There's a huge percentage of people that DOS is exactly what they want, and they should never change. If what you need is a spreadsheet on your desk to replace the calculator that used to be on your desk and do a lot more for you, there's no reason on earth that you should go buy XENIX. You should go buy a machine with however much memory you need, get DOS, get *Lotus*, and everybody's happy. We have no claim on that market. Nor should we. DOS is a fine operating system if that's your goal.

If your goal is to run a four-user accounting department, then how do you do that with DOS? The answer is, well, you buy four PCs and a bunch of networking stuff and try to find some accounting software that can live in that environment. You find out that's pretty hard to do, and if you look at the cost analysis, it's two to three times more expensive at best, and clunky besides, and hard to maintain and build. So if what you wanted was that four-user accounting system, you'd be crazy not to buy XENIX.

The other example is in the two-user world, if somebody's really running against the limitations of DOS—the fact that DOS is an 8086 operating system today, and you may very well need an eight-megabyte address space to run some particular program. Trying to do that with DOS and AboveBoards and all that is kind of difficult. And so you go get XENIX and you just use it as a single-user system, if you want, but it's running the 286 as a 286.

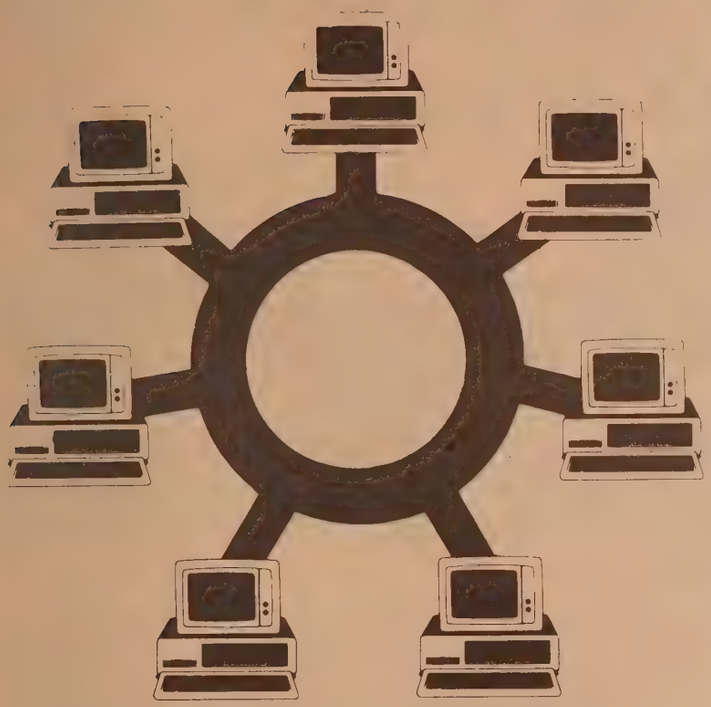
That's even more true when you jump into the 386, and you say hey, now I want paging and 32-bit addressing and all that stuff. DOS can't use a 386 even as a 286. Even when you get whatever the next version of DOS is, whenever it is, it will use the 386 as a 286, and you still have to solve the problem of using the 386 as a 386.

So XENIX fits two niches. One is that it's ahead of DOS by several generations at this point, in using the chips at their rated power. The 386 really is equivalent to a VAX in power, architecture and everything else, but not without an operating system like XENIX.

And two is, a reasonable number of multi-user sites. Depending on whether you're a 286 or a 386, the problem of up to 32 users is very effectively solved with XENIX, as opposed to multi-DOS systems around some sort of network solution.

Other people probably don't belong in XENIX. We don't claim more than a fair share of the marketplace... □

NETWORK



THE FUTURE OF COMPUTERS!
JOIN THE RING AND SAVE!
SHARE EXPENSIVE HARDWARE!

NETWORK ARCHITECTS

We'll show you how Networking your office PCs can improve productivity and save you money. By letting your office PCs share information and expensive peripherals.

NETWORKS TO FIT ALL BUDGETS.

FULL LINE OF EPSON AND TOSHIBA PRINTERS!
all Priced to Move

TOSHIBA PORTABLES
PERSONAL COMPUTERS
T1100 PLUS & T3100
Available Now!

Call for most Aggressive Pricing

EPSON
Equity I Equity II Equity III
All Configurations Available
If you are planning to purchase a Compaq Deskpro, AT&T 6300, or a Leading Edge, LOOK AGAIN! EPSON EQUITY Computers offer you Power and Performance that will leave the competition behind. EPSON is backed by a Nation Wide Network of dealers committed to excellence.

SUPER SPECIALS

20 meg HARDCARDS $379
20 meg HARDDISK KIT . . . 359
30 meg HARDDISK KIT . . . 425
30 meg VOICE COIL AT HARDDISK 495
60 meg TAPE BACK-UP . . . 595

We will surround you with SERVICE, SATISFACTION, from our Expert Sales Staff to our Large Technical Facilities. We are READY, WILLING, and CAPABLE to do Business.
YOU CAN'T BEAT THE EXPERIENCE, THE SERVICE, OR THE PRICES!

P.C. SOLUTIONS INC.
Also doing business as PC Brokers

"PC SOLUTIONS FOR YOUR BUSINESS"
The Computer People
18639½ Ventura Blvd., Tarzana, CA 91356.
(Convenient Boulevard Location Across from Mann's Theater)

Immediate Financing on Approved Credit
Prices Subject To Change Without Notice

FOR INFORMATION & TECH SUPPORT
818-342-8703
FOR ORDERS ONLY
1-800-722-4949
Prices include 2% cash discount
Cash Prices Only
Limited To Stock On Hand
Leasing Available

The Third Generation PC

An Introduction to 80386-Based Microcomputers

By Ken Milburn

This year, more than ever, COMDEX (*the* major micro industry show) was an IBM/PC show. Sure, there was lots of excitement at the Atari booth. And somebody said they saw one Commodore Amiga being used to demonstrate software somewhere. Apple didn't even show up. The rest was devoted to converting the IBM/PC from a bi-plane to a rocket ship.

The fuel for the liftoff was the introduction of an exponentially more powerful member of the 8086 family of the Intel processor chips at the core of every PC. If you've read any computer publication (including this one) in the last 60 days, you've already heard about the 80386. The 386 is a true 32-bit microprocessor that presently runs at 16MHz clock speed. That means it can chunk through data and instructions about 18 times faster than your PC, about two and a half times faster than the average AT. Or, to put it another way, the 386 can run a PC/AT at twice the speed of a DEC VAX/1178 minicomputer.

Remember the excitement when we discovered that the PC could address 640K of RAM instead of the old CP/M limit of 64K? The 80386 can directly address *16 gigabytes*. Intel plans to have the 386 running 50% faster (24MHz) within the next few months. Imagine a computer that clocks 25 on the Norton SysInfo program.

I tromped the aisles at COMDEX for five days looking at all the new computers, accelerator cards and operating systems that are being introduced to take advantage of the 386. My mission: Try to scope out the 386's impact on your use of and plans for new desktop computers in the immediate future.

Innumerable 386 machines have been introduced since Compaq, Advanced Logic Research and Corvus started battling over who introduced the first one. I counted ten being shown in official exhibits. Many more were being introduced by small companies who had rented hotel suites. The most notable exception is IBM itself, which will only say that it plans to keep up with advances in new technology. One wit stated that if IBM waits long enough, they'll have to announce their 386 machine as "Compaq-compatible." AT&T and Texas Instruments say that they'll wait to follow the leader.

The immediate uses for all of the "third generation" 386-based PCs fall into two categories: They will operate as very fast, fully-compatible ATs, or as the central engine for a multi-user system. The 386's speed makes it ideal as a file-server, and its vast memory addressability makes it an excellent candidate for UNIX-based multi-user systems.

It may not seem that doubling the speed of an 8MHz AT is worth the $2,000 (give or take $500) premium for a 386 machine. That's true for the majority of us, who use our machines as one-person workstations for word processing, keeping client lists and working with medium-size spreadsheets. Not that you don't get a rush from seeing the hard-disk directory flash by in the blink of an eye. Some people can't resist spending the bucks for a Porsche or Ferrari, either.

There are users who will get their money's worth out of a 386 machine strictly as a result of its "super AT" capabilities. They fall into four major categories:

- Graphic intensive applications. This includes not only Computer Aided Design and Drafting, but professional illustration, animation and real-world simulation.
- Electronic Publishing (DTP)
- Artificial Intelligence (AI)
- Multi-user systems (including networks).

Up until now, the DOS limit of 640K on RAM has lessened the demand for memory. The advent of 386 computers may foreshadow the end of the memory-chip sales slump. Multi-user, multi-tasking operating systems are voracious memory-munchers that will starve on much less than 4Mb of RAM.

OPERATING MODES

The 386 operates as three different "types of computers" at the same time. Each of these types is called a "mode."

Real mode: This is the mode that earlier Intel CPUs (8088-80286) run when they are first switched on. It uses exactly the same methods as the original 8088 to address 640K of memory, providing complete downward compatibility with programs written for the PC.

Protected mode: The 286-based AT can use this mode to address 16Mb of RAM, although DOS doesn't currently support such operation. When it does, it won't be able to run existing programs. The on-chip memory management and multi-tasking capabilities of the 286 and 386 are part of protected mode. The name comes from the fact that, when multi-tasking, each active segment is prevented from interfering with the others. The 80386 protected mode has some advantages over 286 PM. Being 32 bits wide, it can reside anywhere in the 4Gb memory range. It eliminates the 64Kb segment limit, so a program can use all 4Gb as a single segment. As a result, the 386 can manage up to 64 terabytes of virtual memory.

Virtual mode: This is the 386's way of maintaining more than one 8086 environment in memory at the same time. Each of these partitions can have its own segment of memory. All interrupts and I/O accesses from the various applications can be trapped and held in memory until they are actually using the screen. The advantage of a virtual memory operating system (VMOS) is that it can access otherwise totally unaffordable amounts of memory by "pretending" that a hard disk is RAM.

386 OPERATING SYSTEMS

The paradox of the 386 is that its capabilities give us vast potential for expanding the capabilities of desktop computing, yet it has been said that there is no DOS or application program that will go beyond the memory limits imposed by the first PC.

IBM seems to be protecting its

New Year's Greetings

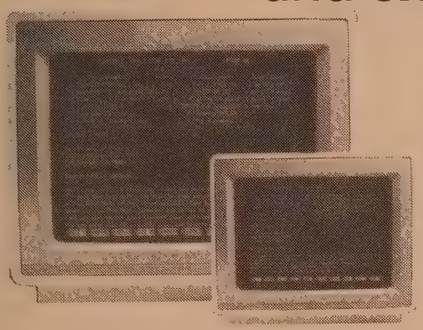
A DISPLAY FOR ALL SEASONS

Buy our basic compatible system, which includes:

640K RAM on board
Turbo 4.77/8 MHz motherboard
8 expandable slots
150W Power supply
1 floppy controller
2 JVC 360K floppy drives
Keyboard

$560

and **CHOOSE THE PERFECT MONITOR!**



monochrome monitor and
100% Hercules compatible card

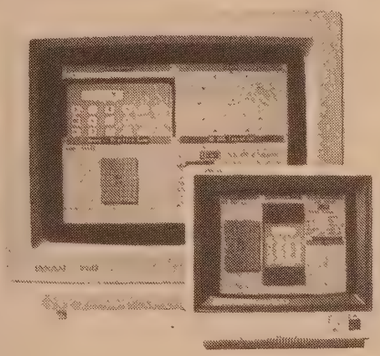
$725
full system

or

color monitor and color graphic card

$945
full system

or



EGA monitor and Paradise autoswitch card

$1310
full system

PERIPHERALS AND ACCESSORIES

Boards
256K Motherboard $95
640K Motherboard $95
Turbo 640K Motherboard $110
Cards
Monochrome/graphic/
printer port $70
Colorgraphic card $55
Colorgraphic card
w/printer port $68
384K Multifunction card $80
Multi I/O Card $73
Driver controller $24
Serial card $28
Parallel card $20
Game card $20
Clock card $25
384K Ram Card (OK) $35
Modems
300/1200 Baud $135
Keyboards
5150 $40
5060 XT/AT $52
5160 XT/AT $52
5152 XT/AT $65
K8 XT/AT $52
K9 XT/AT $55
Power supplies
150 W $55
200 W for AT $95

Many more products available — If you don't see it, please call

AMP

Computer Products

2434-A W. Valley
Alhambra, CA 91803

(818) 570-4406

Dealer/OEM Welcome
Cash/Cashier's check/m.o. only

master charge VISA

24-hour on-line (modem) (818) 570-4314

SUPER SAVINGS ON THIS NEW YEAR'S PACKAGE

Basic system

w/monochrome monitor and card
PLUS 1 20 MEG Seagate 225 Hard disk

$1040

Diskettes **29¢** ea./Pack of 10 **$2.90**

COMPUTER SWAPS LAST ONE DAY ONLY!

COMPUTER SWAP MEETS

A HIGH TECHNOLOGY FLEAMARKET AND MINISHOW FOR PERSONAL COMPUTING ENTHUSIASTS
HUNDREDS OF EXHIBITORS • CONSIGNMENT TABLE • DOOR PRIZES
ADMISSION: $4 IN ADVANCE—$5 AT THE DOOR

JANUARY 10, 1987
L.A. COUNTY FAIRGROUNDS, POMONA
JANUARY 24, 1987
DEL MAR FAIRGROUNDS, SAN DIEGO AREA
JANUARY 31, 1987 *
THE CONCOURSE, SAN FRANCISCO
FEBRUARY 7, 1987
L.A. COUNTY FAIRGROUNDS, POMONA
FEBRUARY 20,21,22
THE COMMODORE SHOW
BROOKS HALL, SAN FRANCISCO
FEBRUARY 28, 1987
ORANGE COUNTY FAIRGROUNDS
MARCH 7, 1987 *
FRESNO FAIRGROUNDS
MARCH 14, 1987
DEL MAR FAIRGROUNDS, SAN DIEGO AREA
MARCH 21, 1987
L.A. COUNTY FAIRGROUNDS, POMONA
APRIL 11, 1987
THE CONCOURSE, SAN FRANCISCO
APRIL 18, 1987
SANTA CLARA COUNTY FAIR, SAN JOSE
APRIL 25, 1987
L.A. COUNTY FAIRGROUNDS, POMONA
* Booths are 50% off at these shows.

COMPUTER SWAP, INC.
PRESENTS
The Commodore Show
FORMERLY A WCCA PRODUCTION
Fri., Feb. 20, 10-6:00 Sat., Feb. 21, 10-6:00 Sun., Feb. 22, 12-5:00
NEW LARGER LOCATION Brooks Hall, Civic Center, San Francisco

- EXHIBITS, EVENTS AND DOOR PRIZES
- NATIONAL COMMODORE SPEAKERS
- SHOW SPECIALS AND DISCOUNTS
- SEE THE LATEST INNOVATIONS IN HARDWARE/SOFTWARE TECHNOLOGY FOR THE COMMODORE MARKET

The Commodore Show is the only West Coast exhibition and conference focusing exclusively on the AMIGA, Commodore 128 PC and C-64 market.

REGISTRATION FEES:
One Day—$10 Three Day Pass—$15

For More Information Or To Reserve Exhibit Space Contact Computer Swap, Inc.

COMPUTER SWAP, INC.
P.O. Box 18906, San Jose, CA 95158 · (408) 978-SWAP (7927) · 800-722-SWAP · In CA 800-252-SWAP

CHECK OUR LOW PRICES

ALL COMPONENTS
IC DISTRIBUTOR

23600 ROCKFIELD BLVD., SUITE 2B2
EL TORO, CA 92630

MATH COPROCESSORS

8087-2 (8 MHz)	$140.00
8087-3 (5 MHz)	$103.00
80287-3 (5 MHz)	DISCONTINUED
80287-6 (6 MHz)	$160.00
80287-8 (8 MHz)	$245.00
80287-10 (10 MHz)	$295.00

DYNAMIC RAMS

1 Meg-120ns 1000Kx1	Call
1 Meg-100ns 1000Kx1	Call
41256-150ns 256Kx1	$2.50
41256-120ns 256Kx1	$2.65
41256-100ns 256Kx1	$3.75
4164-150ns 64Kx1	$.80
4164-120ns 64Kx1	$1.05
4128-150ns 128Kx1	$3.00
4464-150ns 64Kx1	$4.25

EPROMS

2732	$2.75
2764	$2.75
27128	$3.25
27256	$4.50
27512	Call

CPU CHIPS

V20-8 (8 bit)	$12.00
V20-8 (16 bit)	$15.00

CALL (714) 458-6194

Prices shown for UPS COD Cash. Prices are subject to change.
CA residents add 6% sales tax. SHIPPING & HANDLING; UPS Ground $5.00, UPS Air $7.00 (under 1 lb.).

ALL MERCHANDISE IS 100% GUARANTEED.

minicomputer interests by delaying the introduction of a 386 machine. Microsoft obviously has a heavy interest in protecting its relationship with IBM. So chances are good that we won't see an official 386 DOS anytime soon now.

In the meantime, a protected mode DOS that breaks the 640K barrier and lets you do more than one task at a time would work on the 386 and put us light years ahead. Both Microsoft and IBM are rumored to be working on versions of such a DOS. Meanwhile the "insider" stories about what, when, where and why of MS-DOS 5.0 /A-DOS /286DOS /MP-DOS /DOS-CP /VAPOR-DOS are so much in conflict that one wonders whether there will ever be such a thing. Microsoft keeps pushing up its non-deadline, so if we're lucky we may see such an OS sometime in 1988.

We won't be missing much if such an operating system never arrives. By the time you read this, you will be within a few weeks of being able to buy a basket full of alternative operating systems to let you get at some or all of the 386's added muscle. All of these options will run your existing PC/MS-DOS software. Most of them cost less than $200—you could easily afford to take advantage of the system now, then judge Microsoft's VAPOR/DOS on its own merits when and if it arrives. Meantime, there's no serious penalty to pay.

Each of the alternative operating systems makes use of what is called "Virtual 8086 Mode." VM allows the 386 to act as though it were several 8086-based IBM/PCs, each with its own applications and utilities running. Each of these "virtual machines" can run applications software just as if it were running on a dedicated computer, even when only one of them is visible on screen—except that they're zipping along 18 times faster.

DOS SHELLS

First of all, there are the windowing "shells" for DOS. Both Microsoft's *Windows* and QuarterDeck's *DesqView* employ "virtual memory" schemes. Virtual Memory (not to be confused with "virtual machines" or "virtual mode") pretends that hard disks, RAM disks and Lotus/Intel/Microsoft Expanded Memory is an extension of RAM. This lets you load more than 640K worth of applications into different windows, then switch between them at the click of a key or mouse button.

Windows' advantage is that it can

386 OPERATING SYSTEMS

DOS Windowing Shells:

DesqView 1.3 / DesqView 2.0 / EMS Emulator
QUARTERDECK OFFICE SYSTEMS
(213) 392-9851
150 Pico Boulevard,
Santa Monica CA 90405

PC/MS-DOS windowing environment. Faster than Windows, but handles only text-based applications on high-res displays. EMS Emulator causes DV to work in Virtual Mode of 386 with true multi-tasking. Upcoming version 2.0 works with both graphics and text on EGA (Feb. '87)

DOS clones:

Advanced DOS 286 (may be re-named at release)
386 Operating Systems
MICROSOFT
Redmond, WA

Multi-tasking, multi-user version of DOS. Runs in protected mode only. Applications must be re-written to run. No release date or price has been officially announced

VM/386
SOFTGUARD SYSTEMS
(408) 970-9240
2840 San Tomas Expressway, Suite 201
Santa Clara, CA 95051

DOS clone. Uses 1Mb RAM. Runs applications in 1Mb segments. Price and availability not yet announced

PC-MOS/386
THE SOFTWARE LINK
(404) 998-0700
8601 Dunwoody Place, Ste 632
Atlanta, GA 30338

DOS clone especially designed for 386. Runs in Virtual 386 mode. 25 simultaneous PC/MS-DOS applications can run as true multi-user, multi-tasking. Available Feb., 1987

386-specific UNIX systems that run DOS applications:

VP/ix
PHOENIX TECHNOLOGIES LTD.
617-769-7020
Department VP/ix
320 Norwood Park South,
Norwood, MA 02062

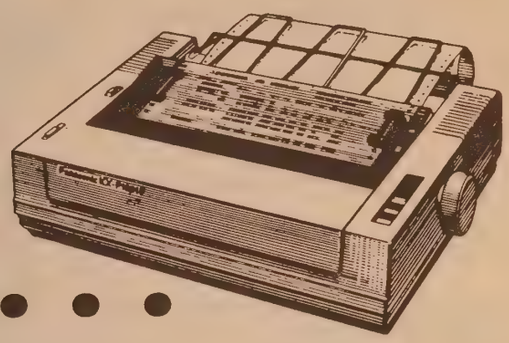
Combination of DOS and UNIX, V.3. UNIX kernel provides scheduling to both UNIX and DOS applications. Multiple DOS sessions can be run concurrently with conventional UNIX/XENIX applications

Microport System V.3 386 / DOS-Merge
MICROPORT SYSTEMS, INC.
(408) 438-8649
4200 Scotts Valley Drive
Scotts Valley, CA 95066

AT&T/Intel approved UNIX System V for 386. DOSMerge utility allows unlimited number of DOS applications to run under UNIX. System can be set up so that UNIX is invisible to user. Multi-tasking, multi-user (up to 25 terminals on 386AT). Run-time OS and DOS-Merge will sell for under $200. Complete system available mid-'87

Panasonic
Industrial Company

If you got a computer for Christmas . . .



The new Panasonic KX-P 1080i is the answer to expanding computer needs. It offers a broad range of word processing and graphics capabilities and is Epson and IBM graphics compatible.

The KX-P 1080i features near letter quality printing, 160 cps white speed, an adjustable tractor, and like all Panasonic printers, is backed by Panasonic's 2 year limited warranty.

With a retail price of only $329, you can't go wrong.

available at:

Atlantic Computer Systems
2260 S. Atlantic #F, Monterey Park, CA
(213) 720-1461

ROCKBOTTOM...
a division of Garden of Eden Computers
16485 Magnolia, Westminster, CA
(714) 841-4994

Computer America
1525 N. Placentia, Placentia, CA
(714) 528-4300

Infotronics
315 E. Main St., Alhambra, CA
(818) 282-6110

P.H. Computers
16511 A Brookhurst, Fountain Valley, CA
(714) 775-3204

Software Station
2750 Harbor Blvd., Costa Mesa, CA
(714) 549-5056

Lifestyle Computer Products
25022 Largo Dr., Laguna Hills, CA 92653
(714) 855-0924

Electronic Data Products
2021 W. Commonweath Ave., Fullerton, CA
(714) 992-1152

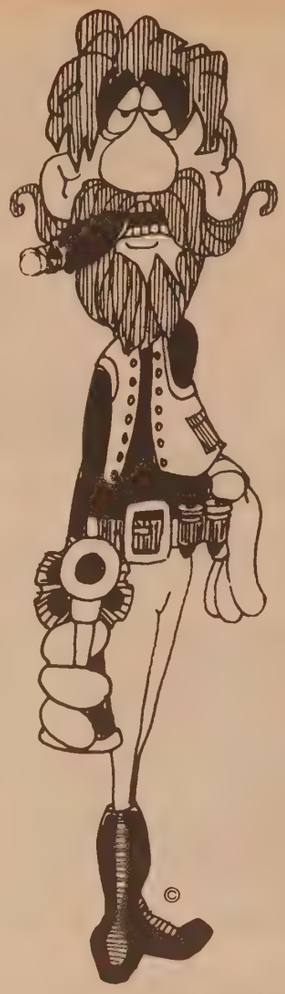
ICS Computers
6478 Westminster, Westminster, CA
(714) 995-4558

or call

AMERICAN MICRO·LINE

for the dealer nearest you
(714) 841-4154
dealer inquiries welcome

IS YOUR DISTRIBUTOR HOLDING YOU UP?



Don't let your supplier's lack of stock hold up YOUR business.
We have extensive stock of our inventory AND IMMEDIATE DELIVERY.

Seagate 20 MB hard drive with controller and cable. $330
(Minimum Quantity 10)
Teac 55 VB $79
(Minimum Quantity 10)
Maxi switch K/B (made in USA) AT & XT switchable . . 45
(Minimum Quantity 10)
EGA card & EGA monitor (IBM-EGA compatible) . . . $550
(Minimum Quantity 5)

Huge selection of AT and XT components in stock now. Please CALL FOR OTHER ITEMS - WE WILL BEAT ANY PRICE!

PC Supply, Inc.

9815 Carmenita #E Whittier, CA 90605
(213) 945-2419 / (213) 945-2410

Price Leader

TAPE BACKUPS

Irwin 10MB	**$299**
Irwin 20MB	$399
Irwin 40MB	$499
Archive 20 MEG external	$449
Archive 60 internal	$639

PRINTERS

Toshiba 321	$429
341	$629
351	$999
Citizen MSP-10	$269
MSP-15	$369

MODEMS

1200 Baud external	**$89**
US Robotics 1200	$159
US Robotics 2400 internal	$199
US Robotics 2400 external	$369

SPECIAL

Thomson Color Monitor—green/amber	$279
Archive 60MEG external	$659
Tandberg 60MEG internal	$499

STORAGE DATA TECHNOLOGIES

To Order call (213) 540-5513

give the much speedier 386 a virtual memory interface to both graphics and non-graphics applications. Quite a few applications specifically written to follow *Windows'* rules have recently been announced. These programs all use *Windows'* device drivers. You and I benefit when it comes to configuring this software for the monitor, printers and plotters we already own. The chief disadvantage of *Windows* is that it's slow, it's a memory hog, and it doesn't operate in the 386's virtual mode.

Windows may also be incorporated into one or more of the upcoming versions of UNIX/Xenix for the 386 as a visual shell for running DOS applications as a task.

DesqView, a $99 windowing utility from Quarterdeck Systems, is another multi-tasking (meaning that various applications can be processing at the same time) windowing environment for the PC. Although present versions won't run EGA graphics programs, *DV* has three major advantages over *Windows:* the latest version supports "virtual 386 mode," which takes full advantage of the chip's speed and power without introducing a non-DOS interface to the user or requiring that applications be re-written. *DesqView* is much faster than *Windows*, and takes better advantage of the 386's speed. This is especially true when it comes to running multiple applications at the same time or when sending information to a printer or plotter. Finally, non-*Top View* applications can be made to run inside windows.

Version 1.3 of *DesqView* is being bundled with the Compaq 386 because it uses that machine's software EMS emulator to address the on-board 32-bit memory. Terry Meyers, the president of Quarterdeck, says that her company has written its own EMS emulator software so that non-Compaq 386 computers and expansion cards can also take advantage of V1.3 in the same way. PC Designs and Advanced Logic Research will bundle *DesqView* with their machines as a result.

Quarterdeck will release a graphical version of *DV* (2.0) in February. Version 2 can intermix text and graphic applications on high-resolution monitors without randomizing the screen or locking up the computer. This will make *DV* especially useful in the CADD and Desktop Publishing worlds.

Version 2 claims to be fully compatible with *TopView*, so that any application with a *TopView* driver will automatically take full advantage of the interface without any need for user configuration or .PIF files. Version 2 will sell for $129.95.

NEW OPERATING SYSTEMS

At least two Microsoft competitors claim to be ready to ship a 386 DOS early in 1987. Both SoftLink's PC-MOS386 and SoftGuard System's VM386 are fully compatible with existing PC-DOS programs. Microsoft has already stated that current applications will have to be totally re-written in order to run under the 5.0/ADOS that unlocks protected mode on the 286 and 386.

PC-MOS/386 does nothing to change the standard DOS interface and doesn't require the user (as opposed to the configurator) to learn anything new except how to switch applications. It purports to allow all existing PC/MS-DOS applications to run as true multi-user, multi-tasking functions. PC/MOS replaces DOS, at the same time taking full advantage of the 80386's capabilities. This OS can support 25 terminals from a single PC and can address the entire four gigabytes of memory available to the 386. Each user can run up to 25 programs at the same time. File and directory security have been implemented. SoftLink promises delivery of versions for one, five and 25 users in February 1987.

SoftGuard Systems VM/386 is a large piece (over 1Mb) of software that is itself a DOS application. Each application also has to have its own megabyte of RAM, so if you want to run three concurrent applications, you'll have to have 4Mb of RAM on-line. Expanded memory boards can't be used, but operations will go very quickly on systems that contain several megabytes of 32-bit extended memory.

UNIX & UNIX/DOS HYBRIDS

The 386 is often described as ideal for microcomputer-based UNIX systems. Several software houses have already announced UNIX systems, and several of these will run PC-DOS as a task.

Microport's pricing and total System V compatibility made it the talk of COMDEX. The company's System V/AT is true UNIX System V, retailing for a mere $160. It runs in protected mode on the 286 or 386 and supports the entire 16 Mb address space. It's possible to have up to 17 users per machine. Unlike most versions of UNIX, V/AT provides support for EGA and Hercules cards, as well as for the 80287 chip.

At COMDEX, Microport announced Release 3, an upgrade to System V. The "3" signifies full implementation for the 386. It fully supports transparent access to DOS systems. All disk drive formats for the AT (which means all current formats for 386-based machines) are compatible with the Microport UNIX. Disk-caching is implemented.

Microport developed System V.3 in cooperation with and under license from both AT&T and Intel, and guarantees it to meet all standards set by both companies for UNIX System V. Several vendors of "commodity" 386 machines plan to bundle Microport at no additional charge.

Because AT&T poured so much money into making UNIX software available for its PC6300+, it's said that there is more software available for the Microport system than for

APPLE COMPATIBLE DISK DRIVES:

Super 5 ½Ht $125
Cased, cabled color co-ordinated to the Apple & ready to plug in

Apple IIc Compatible $105
We cannot say enough about this drive. It is 100% compatible and the warranty cannot be beaten.

½ Height Apple Compatible $99
½ Height also 100% Apple compatible

MACINTOSH DRIVE

External400K $119
External 800K $215

DISKETTES

DS/DD Box of 10 . . . . . $6.95
10 PC Disk Holder $2.50
*Full Lifetime Warranty
Includes Hubrings and Labels 100% Certified

IBM COMPATIBLE DRIVES

TEAC 55BV $99
90 Day replacement warranty double sided double density

TEAC 55F $129

FUJITSU $85
½ Height DSDD

TOSHIBA $99
½ Height DSDD

STOP
AND COMPARE OUR PRICES

APPLE TYPE CARDS

II + 80 Col . . $49.95
Disk Controller Cards $39
Parallel Interface Cards $39
16K RAM Cards $34.95
Super Serial Card $69

DOS plus GWBASIC $39
16K RAM Chips. . . . . 50¢ each
64K RAM Chips. . . . . 9 for $9.00
128 K RAM Chips. . . . . $5 each
256K RAM Chips . . . . . $2.50 each
Infrared Remote Keyboard for IBM . $79
Cooling Fan For Apple $29
8087-3 . . . . . CALL
8087-2 . . . . . CALL
80287 . . . . . CALL
NEC V-20 . . . . . $12.50
Plug In Strips w/Surge Protection . . $11
IBM Printer Cable 6 Ft. $9.95
Shielded & Grounded
Apple Compatible Joysticks (IIc,IIe) $25

IIe Type Extended 80 Column Card w/64K. $49
10 MEG HARD DRIVE $339
For IBM with Controller
20 MEG HARD DRIVE $399
For IBM with Controller

1200 Baud External Modem. $99

XT TURBO $399
FCC Approved w/640 K, AT Style Keyboard

We Ship Daily • 90 Day Replacement Warranty
DEALER Inquiries Welcome • Minimum $2 Shipping Charge

GUENTHER
COMPUTER PRODUCTS INC.

763 Chestnut
Unit B
Santa Cruz, CA 95060

(408) 458-9404

Please Include 3% Shipping Charge

3.5″ and 5.25″ High Density Diskettes

- Certified 100% Error Free
- Lifetime Warranty
- Meets or Exceeds all Industry Standards
- Full Surface Tested
- Jacket Provides Optimum Diskette Alignment and Protection
- Media Life—5,000,000 Passes

JANUARY SPECIALS

FREE SOFTWARE $200 value
with MAXELL DS/DD $12.50

FREE 5¼ DS/DD Diskette to all customers visiting our NEW S. La Cienega showroom.
NO PURCHASE NECESSARY
Limit one per household during January

WIN a TRIP for TWO to SUPERBOWL XXI
in the Precision Flexible Disk SweepStakes
$1 Instant Rebate toward your next purchase of Precision Flexible Disks
Storage Case of Dysan Collection $19.50

FREE Booklet worth over $350 when you purchase Dysan Diskettes or other Quality Dysan Products.

SONY 3.5 DS $1.55
SONY 3.5 SS 1.25
9½x11 PAPER 2500 . . . . . .15.99

DISKE
BOXED

39¢

- Boxed Diskettes are packaged 10 Disks in a plain white box and include the following:
  - Tyvek sleeves
  - Color coded labels
  - Hub rings
  - 100% Error-free
  - Lifetime warranty
  - Major U.S. Manufacturer

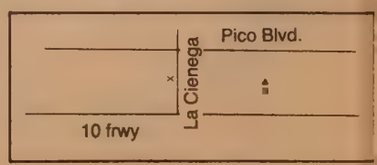
DEALERS/VOLUME BUYERS
Call Us
For The Best Prices
On Diskettes

WE WISH YOU A H

For orders call or send check to:

DATA BUREAU INC.

1731 S. La Cienega
Los Angeles, CA 90035
213-477-5442



Open Mon-Fri 9-6:30

ETTES BULK

29¢

- Bulk Diskettes come with hub ring and write protect tabs, packaged in poly bags.

Add the following extras:

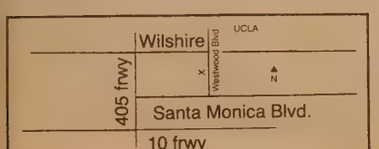
- 2¢ Paper sleeves OR 4¢ Tyvek sleeves
- 2¢ Color coded labels

5.25	HD	$1.25
3.50	SS	$1.25
3.50	DS	$1.35

Add $3.00 shipping per 100 Disks
CA residents add sales tax

APPY NEW YEAR!!

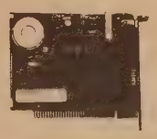
DATA BUREAU INC.



1633 Westwood Blvd., #120
Los Angeles, CA 90024
(213) 479-0345

Sat 10-5

Internal Modem



300/1200 BAUD
Fully Compatible

$129

Now! EGA Board

Enhanced Graphics Adapter

Compatible With All
Popular Video Standards

$219

FDC

Controls Two
Floppy Disk Drives
Includes Controller Cables

$39

I/O

Game Port, Parallel Port, Serial Port & Clock/Calendar

$79

ColorCard

Color Display Card
With Parallel Port

$79

Keyboards

For IBM® PC, XT, or AT™

5151
w/Separate Numeric & Cursor Keyboard . . . **$69**

5160
AT Style Keyboard w/Indicator Lights . . . **$69**

Standard MFC

Multifunction Card

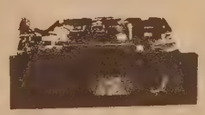
384K Memory, Serial & Parallel Port, Clock/Calendar, Game Port **$125**

Samsung

12" Flat Screen Monitor with Built-in Tilt & Swivel Base

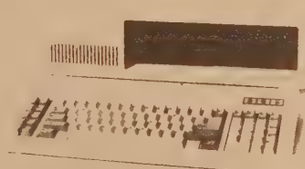
$85

TEAC or Panasonic



$99

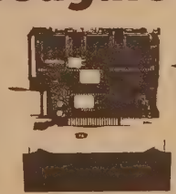
The IBM® XT compatible computer at an affordable price.



Only $369

Includes: *256K RAM expandable to 640K on motherboard, floppy drive, controller card and keyboard*

Seagate Hard Disks



20 Meg Internal
$365*

30 Meg Internal.....$469

INCLUDES: Bootable from Hard Disk; W/D Controller; Cables; Hardware; Easy Instructions; Software; 1 Year Warranty;

MonoGraphic Card

Hercules* Compatible Monochrome Graphic Adapter w/Parallel Port

$99

any other UNIX system. Given Microport's price advantage, there is plenty of incentive for developers to see that this continues to be true.

Phoenix Technologies' VP/ix is another combination of DOS and UNIX. It is a multi-tasking UNIX kernel (System 3) extended to provide interrupt-driven scheduling to both UNIX and DOS applications. According to Phoenix, multiple DOS sessions can be run concurrently with conventional UNIX/XENIX applications. VP/ix runs DOS applications in "Virtual 8086 mode" while the UNIX kernel runs in 386 mode. Even those DOS programs that are considered "ill behaved" will run and can be invoked from UNIX, and vice-versa. Furthermore, file transfer utilities between the operating systems are unnecessary. Each application runs in its own secure virtual address space.

You are not likely to find VP/ix at your local dealers, since it is being marketed primarily to hardware makers for inclusion with their units. In order to be compatible with applications that perform input and output through the ROM BIOS, a version of the Phoenix ROM/BIOS modified for maximum performance under VP/ix is included, along with MS-DOS 3.2.

Since some of the 386 computers depend on their own BIOS to handle the compatibility of their architecture, it's quite possible that VP/ix may not be workable as an off-the-shelf 386 DOS/UNIX. Applications running under VP/ix don't use any DOS device drivers. Software calls to printers, monitors and the like are all interrupted by VP/ix and handled through the UNIX drivers. Although this makes for uniform configuration, one wonders how well VP/ix will support some of the more esoteric monitors, printers and plotters.

It's reassuring to consider that Phoenix is the recognized industry leader in IBM/PC compatibility. On the other hand, their insistence on making VP/ix incompatible with any non-Phoenix BIOS may force some users into the Microport camp.

386 COMPUTERS

ATronics 386
ATronics INTERNATIONAL, INC.
(408) 943-6629
1830 McCandless Dr.
Milpitas CA 95035

Sample machine shown at Comdex. Standard AT-style case. Promises low-cost, high-performance. Available 1st qtr., '87

AT386
COMPUTER DYNAMICS, INC.
(512) 836-5707
2201 Donley Drive, Ste. 365
Austin TX 78758

This company says they will have the first 24 MHz machine, early '87.

386 file server
CORVUS SYSTEMS, INC.
(408) 559-7000
2100 Corvus Drive
San Jose CA 95124

Comes with 70Mb and 126Mb HD with 60Mb tape backup.

Kaypro 386i
KAYPRO
(619) 481-4300
533 Stevens Ave
Solana Beach, CA 92075

Looks like a 286i, but with a larger hard-disk, a 386 processor and some 32-bit slots. Runs at 16MHz and appears to be based on the Intel motherboard.

Laser 386
LASER DIGITAL COMPANY
(408) 747-1966
1024 Morse Ave.
Sunnyvale CA 94086

Also makes AT compatibles. Sells to OEMs and distributors.

Multitech 1100
MULTITECH ELECTRONICS
(408) 773-8400
1012 Stewart Drive,
Sunnyvale, CA 94086

Lists at $3,995. Std 25ms 40Mb HD. Pushing it as a network server. Up to 2Mb RAM on main board. 101 key keyboard. Option for 80 or 130Mb hard-disk. Claims to be slightly faster than Compaq (3400 dhrystones vs. 3000)

PC's Limited 386
PC'S LIMITED
(512) 339-6800
611 Headway Circle, Building 3,
Austin, TX 78754

Uniquely handsome AT case. Claimed faster than Compaq. PCL expects 24Mhz version to be available mid-'87. Price approx. $4,500. Available 1st quarter, '87

WYSEpc 386
WYSE TECHNOLOGY
(408) 433-1000
3571 N. First Street,
San Jose, CA 95134

Wyse demo'd this machine's potential as file server and engineering workstation, but didn't announce specs, availability or price. Expected to ship mid-'87

ZENITH DATA SYSTEMS
(312) 699-4800
1000 Milwaukee Ave,
Glenview IL 60025

Based on AT-compatible. Product will undoubtedly be first to hit gov't payrolls.

DOS PROGRAMS THAT RUN UNDER UNIX

AT&T has also spent a fortune promoting the development of software to run under UNIX V/AT for its 6300+ and 3B series of computers. As a result, there's quite a bit of application software available. Even DOS favorites like *WordPerfect*, *Framework* and *Smart* are available in UNIX versions. The Santa Cruz Operation has even gone so far as to write clones of *Lotus 1-2-3* and *dBASE III* for XENIX. All of this software will run unmodified on the present generation of 386 computers, either under Microsoft XENIX or Microport UNIX. XENIX presently takes advantage of only 16Mb of RAM under protected mode. Few users would implement more than that anyway, given the present cost of chips.

THE AT BECOMES A MINI

You can migrate upward to the 386 via one of three paths:

- Buy a 386 computer.
- Plug an accelerator card into an AT or compatible.
- Replace the motherboard in your XT or AT.

All of the machines thus far announced (or hinted at) are fully AT-compatible. Most machines bear a strong exterior resemblance to the IBM/AT; many are nearly identical. Motherboard layout seems to be following one of three standards, all of them XT/AT compatible.

Some manufacturers are following the board design provided by Intel, others the design approved by the PC Extended Technology Group (42 manufacturers originally brought together by Phoenix Technologies to formulate an expanded AT bus to incorporate the 386 and 32-bit slots). Both of these designs produce AT-form motherboards.

The third group of motherboards generally use the Chips & Technology 386 Chipset (seven chips) which reduces the chip count to about 30 and makes for boards small enough to slip into an XT case. All of these motherboards have at least one 32-bit slot, at least a couple of 16-bit AT slots and two or more 8-bit PC/XT slots.

32-bit slot designs fall into three categories as well: Intel, Phoenix, and proprietary. Most designs employ some sort of cache memory scheme to speed up the 386's correspondence with the slower devices running off the 8- and 16-bit slots. Every manufacturer seems to be employing a different scheme, so we'll have to wait for individual benchmarking by independent sources to see which ones are most effective.

The most talked-about 386 machine is Compaq's DeskPro 386. Compaq has managed to attain an excellent reputation for quality and engineering and quickly became the #1 maker of PC compatibles. Tired of being a "me too" company, Compaq announced its intention to set the standard for 386 machines with this one. Since the machine was introduced, Compaq says it has been unable to produce them fast enough to keep up with the orders. Compaq wrote its own 386 ROM BIOS, designed its own bus, and uses a unique RAM scheme that treats 32-bit memory as Lotus/Intel/Microsoft expanded memory.

Advanced Logic Research announced its 386 computer at about the same time as Compaq, but waited for COMDEX to show it to dealers. ALR claims that its machine is slightly faster than Compaq's. It comes with a Phoenix 386 ROM/BIOS and sticks to the motherboard design proposed by the PC Extended Technology group. The $7,000 machine includes a 40Mb hard disk EGA card and EGA monitor. ALR is aiming its product at the advanced graphics and CADD marketplace.

PC's Limited's 386 is housed in the same cases as the Texas mail order firm's latest model ATs. You have a choice of a smaller footprint machine capable of housing three half-height drives or the larger, standard layout AT. The front panel has been distinctively re-styled, making this one of the handsomest units in the show.

PC Magazine benchmarks rate this a significantly speedier machine than the Compaq. The clock presently runs at 16MHz, but PCL claims it will be running at 24MHz within the next few months and can be upgraded when the required chips become available. Like the RAM Systems 386 motherboard, this one is based on Chips and Technologies' AT chipset and measures only 9x13 inches. Pure static RAM chips are used for 32-bit memory, insuring compatibility with 24MHz processors running at 24MHz and zero wait states.

PC's Limited will offer a 150Mb hard drive with an average access time of 16ms! It's not the cheapest of the 386 machines, but company spokesmen expected it to sell for around $4,500—several thousand dollars less than Compaq's.

The features profiled in the three machines above are typical of those found elsewhere at COMDEX. Zenith, Wyse, PCDesigns, ATronics, Computer Dynamics, Kaypro, and Laser Digital all showed 386 systems running at 16MHz with the same styling as their AT-compatibles. Multitech, one of the largest clone makers, claimed to have the lowest-priced 386 at $3,995, including a very fast (25ms) 40Mb disk and a 101 keyboard. Multitech has been blessed with favorable reviews for its AT-compatible, so we can expect this one to be a good value. What makes it even more attractive is the versatility of the expansion slot layout: three 32-bit (most machines had only one), three 16-bit and two 8-bit. Corvus Systems, famous for its PC networks, wins the award for the most unique machine with its 10-slot upright 386 file server.

NEW HORSEPOWER FOR OLD FAITHFUL

If you're attached to the computer

Progression without Compromise

MULTITECH 900 80286 10/6 MHz

512K RAM UP TO 1 MB, SERIAL/PARALLEL

SOFT-WHITE MONITOR AND ADAPTER

NATIONWIDE SERVICE BY TRW

ONE YEAR WARRANTY

Multitech
ELECTRONICS INC.

ADDITIONAL PRODUCTS AVAILABLE

- EGA MONITORS AND ADAPTERS
- 2400 BAUD MODEM
- AT/PC MULTI-FUNCTION CARDS
- COLOR MONITORS AND ADAPTERS
- AT/PC LIM MEMORY CARDS
- AT/PC MULTI I/O CARDS

WORLDWIDE COMPUTERS
1909 S. Pontius Ave. LA 90025 213-473-3881

you already have (and the money you spent on it), you can upgrade it instead of replacing it. Just about every marketer of PC expansion cards has introduced a 386 plug-in accelerator.

If any company ought to know how to make a fully compatible 386 accelerator card, it's Intel. After all, they designed the chip. The Inboard 286 AT is said to operate at twice the speed of an 8MHz AT. The board can be used only in a 16-bit AT bus slot and is fully compatible with all of Intel's AboveBoard memory products. That should mean that it's also compatible with other expanded memory cards that meet the Lotus/Intel/Microsoft Expanded Memory Specification (LIM/EMS). A high speed memory cache is included on the board so that non 32-bit memory can be accessed without a speed penalty. An optional 10MHz 80287 math coprocessor module plugs into the onboard socket for the eventual 80387 coprocessor. It is possible to add up to 3Mb of 32-bit memory to the Inboard by plugging in a 2Mb piggyback board. The basic above board retails for $2,495 with 1Mb RAM. The 2Mb piggyback board retails for $1,145. The 10MHz 80287 math coprocessor retails for $495.

The least expensive accelerator award goes to Orchid Technologies. That's even better news given Orchid's reputation for making the most problem-free 286 "turbos." The Jet 386 with 1Mb RAM will retail for $1,495, but is available at an introductory price of $1199. Jet may be an appropriate name—it has 64K of cache memory on board to speed the transfer of memory from the 16-bit bus.

Orchid says the Jet runs at three times the speed of the AT and is 100% compatible with all existing PC software, as well as any forthcoming 286 or 386 software. The Jet can be used only in ATs and compatibles, but will work in any slot. You leave the 80286 in your system and can easily switch between the 386 and the 286. Orchid claims complete compatibility with networks, disk controllers and high-resolution color graphics cards. Although there's no provision for an 80387 math coprocessor, you can use a 12MHz 80287 to speed along *Lotus* and *AutoCAD*.

Sigma Designs showed an accelerator card that will allow you to piggy-back up to 16Mb of 32-bit RAM. Most cards max-out at 3Mb. Quadram and Applied Reasoning showed 386 cards that work in the XT. AR's card doesn't require you to pull your 286 and replace it with a cable connector, as most of the others do.

Although every card manufacturer claims that his accelerator card is 100% free of incompatibilities, many of us remember the poor reputation of many 286 cards for the PC and XT. RAM Systems offers an alternative for those of us gripped by accelerator paranoia.

The Chips & Technologies AT chipset allows this 386 motherboard to be small enough to fit into an XT case. I replaced the motherboard in my Black Ship AT clone and had the pleasure of watching this article scroll from top to bottom at lightning speed as I was editing it.

If you can cost-justify the benefits of the 386's added speed and vast memory-addressability, there's no reason not to buy now

Next month, after more thorough testing, we'll do a hands-on feature on building your own 386 mini. For now, suffice it to say that replacing the board (which I'd never done before, although I've had plenty of experience swapping cards and drives) took less than two hours. Everything that was plugged into my old motherboard (AST RAMPage!, Hercules card, Paradise AutoSwitch EGA, Western Digital controller, DataDesk keyboard, Logitech C7+ mouse) works just fine. At $1,995, RAM is offering a path to a true 386 machine for about the same price as most of the accelerator cards.

One of the reasons most everything seems to work with RAM's motherboard is that the 386 runs at 12MHz clock speed instead of the usual16. RAM then accelerates performance with an expecially efficient bus design that runs at 10 MHz.

PERIPHERAL ADVICE

If you are working with the 16MHz motherboards that all of the other manufacturers are using, you will need to work with components that can keep up. Memory chips on expanded memory cards, for example, should be of the 120ns (or faster) variety. Slower chips can burn out, even if they appear to work for a while. If you're planning to run one of the new 386 multi-tasking operating systems, you will need to make sure that the computer or card can be upgraded to at least 4 Mb of 32-bit RAM.

These machines are so new that no one has had time to adequately test all the existing peripherals for compatibility. You'd be smart to take your old cards to a dealer for testing before planning to install them in a 386.

The 386 won't make PC or AT accessories run any faster. If you want to maximize overall performance, look for the fastest add-ons. First, buy the board maker's 32-bit memory instead of EMS cards. Second, buy the fastest hard disk you can afford. Apparently, the 386 standard for hard disks will move up to 40Mbytes, with average access time speeded up to less than 30 milliseconds. A horde of very large capacity hard disks (80-160Mb) with access times ranging from 18-28ms (about 2X the speed of an AT disk) were announced at COMDEX. Finally, look for graphics cards that feature either TI 34010 or Intel 82786 graphics co-processors. Slow EGA cards will molassify everything that goes to your monitor.

LOOKING TO THE FUTURE

You ain't seen nothin' yet. Within the next year and half, even faster and more powerful PC-compatible systems will come along—and they may be even cheaper. Although present 386 machines run two to three times the speed of an AT, future boxes can be expected to be as much as ten times faster. There are several reasons for this. Intel has announced that 24MHz versions of the chip will be ready for market in early '87. Operating systems and software that maximize the advantages of the 386 will run much faster. New bus designs can be made to more efficiently utilize the 32-bit data path. Finally, peripherals that are designed for the 32-bit bus will greatly improve the throughput from disk drives, graphics displays and other add-ons.

We'll see a lot more innovation, too. DataVue (a division of Quadram) announced a PC add-on box, the Super Micro 150, and the Series 30 Personal Computer. The System 150 operates at up to 24mips. That's *eight times faster* than the current crop of 386s. The 150 box attaches to the Series 30 replacement board for PC motherboard. Or you can simply buy a Series 30 PC-compatible from Datavue.

Meantime, if you can cost-justify the benefits of the 386's added speed and vast memory-addressability, there's no reason not to buy now. Operating systems like Microport's UNIX V.3 and SoftGuard's VM/386 are going to be able to deliver the multi-tasking, multi-user capabilities we want. And they don't stand in the way of using whatever Microsoft or IBM comes up with later.

(By the way, Intel is currently working on the 486, and it could be here within the next 18 months. . .) □

Copyright ©1987by Ken Milburn. All rights reserved. Ken Milburn's PC Systems column will be back next month.

386 ACCELERATORS

PC-Elevator 386
APPLIED REASONING CORPORATION (617) 492-0700
86 Sherman St., Cambridge, MA 02140

Works in PC, XT and AT compatibles. Priced at $1,995 with one megabyte of memory. Replacement of 286 chip not required. Possible to expand 32-bit memory up to 16 megabytes.

Inboard 286 AT
INTEL PC ENHANCEMENT OPERATION (503) 629-7364
5200 NE Elam Young Parkway, Hillsboro OR 97124

Fits in 16-bit AT bus slot and is fully compatible with all of Intel's AboveBoard memory products. 32-bit memory expansion on 2Mb piggyback board. The basic above board retails for $1,995 or $2,495 with a full complement of 1Mb RAM. The 2Mb piggyback board retails for $1,145

Jet 386
ORCHID TECHNOLOGY
(415) 490-8586
47790 Westinghouse Drive, Fremont CA 94539

Lowest priced accelerator. $1199 special. 64K of cache memory on board to speed the transfer of memory from the 16-bit bus. The Jet can be used only in ATs and compatibles. 286 stays in system, user can switch to AT mode

Quad386XT board
QUADRAM CORP.
(404) 923-6666
One Quad Way
Norcross GA 30093

Another board said to work in an XT

CPU 386; TurboCache 386
SIGMA DESIGNS
(415)770-0100
46501 Landing Parkway, Fremont, CA 94538

CPU386 - Requires 16-bit AT expansion slot. Piggyback memory up to 16Mb. Comes with serial and parallel ports, clock/calendar, and its own DMA, interrupt and keyboard controllers. Cables to 286 socket, replacing the AT's CPU

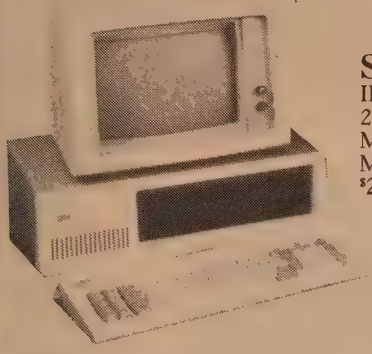
TurboCache 386 - Doesn't replace the 286, just plugs into a 16-bit slot in the AT. Can be expanded to 4Mb of 32-bit memory with piggyback boards. Uses 32K memory cache expandable to 128K

New Low Prices

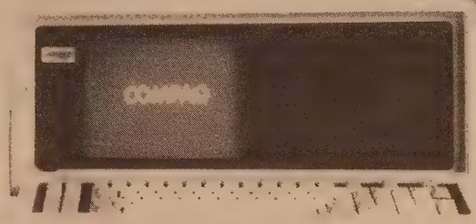
(We Deliver And Install. Ask For Details)

YOU SAVE NOW!

Limited Offer



SPECIALS
IBM 1 Dr AT 512K, 20MB Hard Disk, Mono Monitor & Mono Card
$2895



SPECIALS
Deskpro 286, 1 Dr., 256K, Mono Monitor & Mono Card
$2195

IBM Products

IBM PC 2 Dr., 256K, Mono Card & Mono Monitor, Serial, Parallel, Clock, Calendar $1395
IBM AT 1.2, 512K 20MB HD 2595
IBM AT 1.2 MB Floppy + 256K 2195
IBM XT 1 Dr. + 20 Meg HD/30 MB 1945/2035
IBM AT 339 (NEW 8MHg) ..... Call
IBM Convertible 2 Dr. + 256K 1295
IBM XT 089 Enhanced (new)/286 (new) 2090/2795
IBM Pro Printer/XL 385/545
IBM Quiet Writer II 1120
IBM DOS 3.1/3.2 ..... 61/68

Hard Disk

Seagate 20 Meg Complete System $365
Seagate 30 Meg Complete System 440
Seagate ST 4038/4051 ..... CALL/CALL
1200 Baud Modem 150

Cards

Western Digital Floppy & Hard Disk Controller (AT) $225
Western Digital Hard Disk Controller (8 bit) 99
Western Digital Hard Disk Controller (16 bit) 185
AST Six Pack Plus 135
AST Advantage 335
AST Multifunction compatible 95
AST Compatible w/64K 99

Printers

Toshiba P321/351 ..... 460/960
Okidata 182/192 ..... 245/325
Okidata 193 525
Epson LX 86/FX 85 ..... 248/390
Epson LQ 800/LQ 1000 ..... 550/750
Epson EX 800/EX 1000 ..... 750/995
Epson FX 286 499
IBM Pro Printer/XL 385/545
HP Laser/HP Laser +/500 + ... 2150/2850/3550
IBM Wheel Printer 985

Compaq Products

Compaq Portable 1 Dr. 256K 20 MB HD $1975
Compaq Deskpro 2 Dr. + 256K 1545
Compaq Portable 2 Dr. + 256K 1495
Compaq Deskpro 286 Mod I 1895
Compaq Deskpro 386 4595
Compaq Portable 286 Mod I 2875
Compaq Portable II Mod II 2445
Compaq Portable II Mod IV Factory/Upgrade 3495/2990
Compaq Amber/Green Monitor 195
Compaq DOS 3.1 62

I.C./Memory Chips

256K Dram ..... $2.25 (min 100)
64K Dram ..... .87 (min 100)
128K Dram ..... 2.95 (min 100)
8087-2 Intel Math Coprocessor 148
8087-3 Intel Math Coprocessor 115
80287-3 For AT 165
80287-8 For AT 245

Floppy Disk Drive

Fujitsu 360 KB ..... $69 (min 10)
Toshiba 360 KB ..... 75 (min 10)

Call for any/all configurations

IBM XT Compatible

2 Dr. 640K, Mono Card, Mono Monitor, Serial, Parallel Clock, Calendar

$795

Dealers and Consultants please call for our Dealer price list.

MasterCard Visa

D-DATA

SALES/SERVICE/REPAIR

4742 Woodman Avenue
Sherman Oaks, CA 91423

For phone order call:
(818) 905-0994 (213) 859-3410

con • nec • tiv • i • ty, *n.* - the condition of being connected.

The Interface Tools Of The Future Are Available Now!

PARALLEL TO SERIAL CONVERTER
Includes 10′ Cable:

This model has been designed to convert parallel data from a Centronics interface (INPUT DB-25 Male Connector) to RS-232C serial data (OUTPUT DB-25 Male Connector). Supports DTR handshaking and is powered by an external DC 9 volt power supply.

$79.95 sug. retail Was $99.95

SERIAL TO PARALLEL CONVERTER
Includes 10′ Cable:

This model has been designed to convert RS-232C serial data (INPUT DB-25 Female Connector) to Centronics parallel data (OUTPUT 36 Pin Male Amphenol Connector). Supports DTR handshaking on input and is powered by an external DC 9 volt power supply.

$79.95 sug. retail Was $99.95

AUTO-T SWITCH
PERIPHERAL SHARING DEVICE

Allows 2 to 6 workstations to share the same printer (laser, dot matrix, daisywheel or plotter) Automatically.

This means no more manual switching, no more lost time, no more lost information.

So easy you'll forget it's there!

New Lower Prices

FIVE MODELS TO CHOOSE FROM

1) 3 Serial In/1 Serial Out $119.95
2) 6 Serial In/1 Serial Out $199.95
3) 3 Parallel In/1 Parallel Out $109.95
4) 6 Parallel In/1 Parallel Out $199.95
5) 3 Serial 3 Parallel In/1 Parallel Out $219.95
6) 3 Parallel 3 Serial In/1 Serial Out. $219.95

CALL For Dealer, Corporate & OEM Discounts and More Information

1031 E. Duane, Suite H, Sunnyvale, CA. 94086
(408) 730-1112 800-621-0854 ext. 309

"The Interface Specialist"

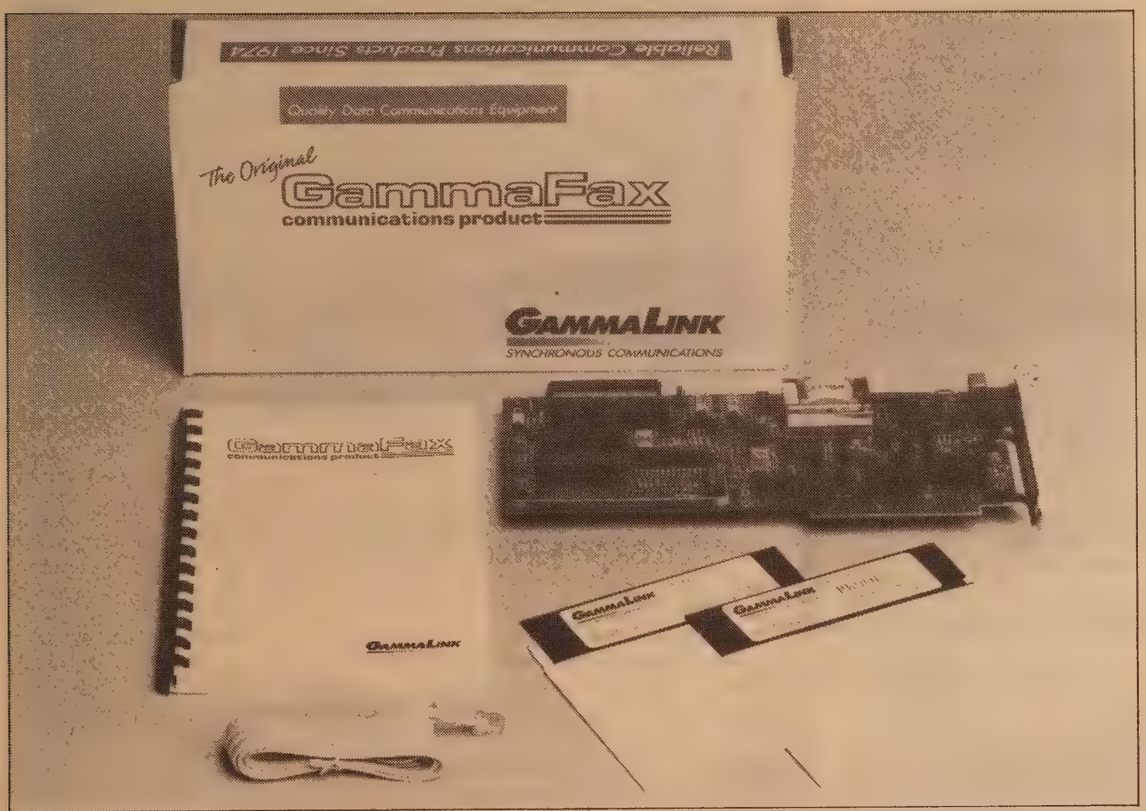
INTEGRATED MARKETING CORP.

INTERFACE TOOLS

Fax Meets PC

The convergence of facsimile technology and the personal computer industry offers a new way to transmit information fast. Here's a look at what's possible now—and what to expect in the future.

By Julie Weiss



The GammaFax hardware and software package from GammaLink (415/856-7421) provides a direct link between a PC and a remote facsimile machine. Documents can be sent directly from the PC via the phone lines to a digital facsimile device, thus eliminating the need for a sending fax machine.

In today's fast-paced business world, where everybody needs information yesterday, speedy transmission of documents is often vital. While most businesses rely on overnight-mail carriers to get documents from place to place quickly, there's no doubt that this is an expensive option.

A better and cheaper solution is on its way, from an often-ignored source—not Federal Express, not MCI Mail, but the facsimile (fax) machine. The fax machine can send documents to destinations anywhere in the world in less than 20 seconds, for a price of 45¢ a page. Because of the substantial savings of time and money it offers, fax technology is winning ever-increasing acceptance in the business world.

A SHORT HISTORY OF FAX

The fax machine can be described as a photocopy machine which transmits a document over the public telephone network. Its basic function is to scan documents and encode them into audio signals, transmit these signals over telephone lines, then reconstruct the signals at the receiving end to print an exact duplicate of the original document.

Fax technology is not new; the first fax machine was invented in 1843 by Alexander Bain. However, the technology lay dormant for many years because of transmission problems, poor quality of output, and lack of standardization between different manufacturers' machines.

In the late 1960s, the CCITT (Consultative Committee for Telephone and Telegraph) set international standards for facsimile devices. It established recommendations for protocol and transmission techniques so that different machines could communicate with each other. The CCITT standards were divided into three primary Groups: Group 1, which allows transmission of a document in four to six minutes; Group 2, which provides two-to-three-minute transmission; and Group 3, which transmits in less than a minute.

Group 3 is the predominant transmission standard used today. Standards for a new category, Group 4, are in the process of being devised for transmission through private digital networks. Group 4 devices can send a document anywhere in the world in five to eight seconds. However, industry experts believe that it will be sometime in the next decade before Group 4 technology finds wide acceptance, because its standards depend on general adoption of ISDN (Integrated Services Digital Network).

For a variety of reasons, facsimile devices have enjoyed a dramatic increase in popularity in recent years—total end user shipments of fax machines grew from 89,000 in 1984 to 157,000 in 1985, an increase of 76% in one year. This growing acceptance can be traced to several factors—universal standards, decreasing cost of Group 3 equipment, extensive advertising campaigns by manufacturers, and broader channels of distribution.

After the CCITT standards were set, facsimile machines became fully compatible with each other. The standards enabled machines to talk to each other anywhere in the world in a matter of minutes. Further, fax offered a considerable advantage in accuracy over the competing telex technology: while a telex user must key in all the information at a terminal, thereby creating a significant possibility of error, all the fax user has to do is insert the original document into the fax machine.

Meanwhile, public awareness of fax technology has been boosted by vigorous radio, television and magazine advertising campaigns by such key vendors as AT&T-IS, Ricoh, Canon and Harris/3M.

Finally, a change in the distribution channel for fax machines has had a profound effect. Prior to 1984, fax machines were sold through the individual manufacturer's direct sales force. The prices were high enough to generate large commissions for the sales team, and the target market was the Fortune 500. In 1984, as prices began to decline, the manufacturers saw they couldn't afford to keep a direct sales operation throughout the United States.

In the meantime, many fax vendors who were also manufacturing copiers and typewriters sold their wares through office equipment dealers. The dealer channel offered various advantages, notably stronger market penetration and attractively high profit margins for dealers. The typical office equipment dealer, found in every city and town in the US, has one or two offices and covers a certain geographic and demographic area. He knows and understands his customer base very well. His target market is the small- to medium-sized companies (such as doctors' and lawyers' offices, pharmacies, schools, banks, etc.). Office equipment dealers are currently the predominant distribution channel for fax devices.

This, too, will change, probably by 1988-89. When the price of fax goes below $1500, it will not be financially advantageous for dealers to carry this product, as gross margins will be slim; retail stores and mass merchandisers will emerge as leaders in fax distribution as prices continue to fall.

Currently, the average fax machine price is $3000. The features offered include delayed broadcasting, sequential broadcast, and activity reports. Delayed broadcasting permits the fax to call when phone rates are lowest and when the machine is unattended. Sequential broadcast will call one number, transmit documents, call the next number, transmit documents, and so on. Activity reports generate time and date stamps to

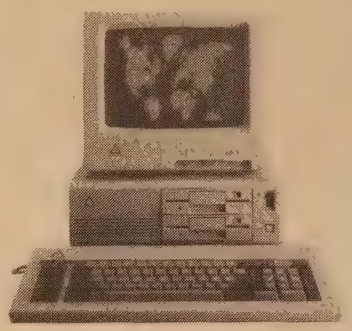
FASTER THAN A SPEEDING BULLET

(just kidding, folks...)

BUT SERIOUSLY —

The Turbo ⚠

The best-selling compatible from Leading Edge is now 50% FASTER!!



NEW TURBO
Model "D"™ system
Complete system & printer & software & 10 disks & paper & cable

* subject to mfg. change of price · DON'T DELAY!

$1295*
IN STOCK NOW

ATARI

1040 ST Monochrome **$899**
520 IN STOCK
MacIntosh emulator available

EPSON

Equity I, II, III
Full line of printers
Equity I system **$849**
In stock now

INFOTRONICS COMPUTERS
315 EAST MAIN ST., ALHAMBRA
TEL: (818) 282-6110/282-4592

Authorized Epson Dealer • Authorized Leading Edge Retail Dealer
Leading Edge and Model "D" are registered trademarks of Leading Edge Products, Inc.

The pc-FAX board from Electronic Information Technology (201/227-1447) allows PC-to-PC communications and transmission between PCs and facsimile machines. The software which accompanies the board offers image handling, text and image merging, and ASCII-to-fax file conversion. An optional Optical Character Recognition module allows the user to receive a facsimile of a typed document, then convert it to a format that can be edited by a standard word processor.

show when documents were transmitted and received.

New features include memory and RS232C interface ports. Memory, usually one or two megabytes, allows documents to be stored for later transmission, so that they can be put back in the files instead of kept sitting around in trays. Up to 100 numbers can be programmed into memory, and can be dialed up at the push of a button or two, enabling those 100 locations to receive documents. The RS232C ports allow computer to fax communication, with the fax machine serving as a printer.

PERSONAL COMPUTERS AND FAX

A new development in fax technology is the availability of add-on products which allow a personal computer to emulate a fax machine. The fax card is fitted into the back of an IBM PC or compatible machine, and used in conjunction with special software; these products will convert image files in the PC into Group 3 format and then transmit the files to any other Group 3 machine or similarly equipped personal computer. The board and software will also enable the PC to receive Group 3 transmissions, convert them into image files and store them on disk for display or printout. The average price for the board and software is $1000, most of which is for the board's 9600 bps modem chip.

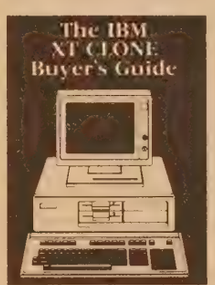
This technology offers features similar to those of the fax machine—polling, automatic receive, halftone, automatic dialing, and activity reports. Many new players in the market, such as Datacopy, Microtek, and Panasonic envision the personal computer with the board, software, and scanner as a viable substitute for the standalone fax machine.

There are still some significant obstacles to the acceptance of fax-PC technology. Currently, the PC board and software allow text and graphic file creation, but only copy generated by a PC can be sent. Until scanners are incorporated into the workplace, the expansion of the PC-based fax market will be relatively slow.

Another problem is that it's fairly wasteful to use a personal computer solely as a dedicated fax machine. Until vendors offer boards with background recognition capability—i.e. the ability to receive fax documents while working in some other application—this use of the personal computer probably won't be widely adopted. Currently only two manufacturers—Panasonic and Datacopy—offer such a board.

There is clearly an awareness of and market for facsimile machines. The question is no longer when fax will be accepted in the marketplace, but rather which technology will emerge as the winner—the standalone unit or fax board. In either case, vendors are addressing the key issue—enabling users to send time-vital information anywhere in the world in an efficient and inexpensive manner. □

†Copyright © 1986 by Julie Weiss. All rights reserved. Julie Weiss is a Research Associate in the Telecommunications Industry Service at Dataquest in San Jose.



THE IBM XT CLONE BUYER'S GUIDE

"Choosing a good PC Clone is not easy . . . I recently came across two useful resources for those thinking about buying a PC Clone. THE IBM XT CLONE BUYER'S GUIDE, by Edwin Rutsch."
—Lawrence Magid, *Los Angeles Times*

"You should get this book before you buy any computer"
—Art Kleiner, Fall 1986, *Whole Earth Review*

"THE IBM XT CLONE BUYER'S GUIDE . . . outlines everything you need to know about piecing together your own clone or what to look for when buying an assembled clone."
—John C. Dvorak, *San Francisco Examiner*

The IBM XT CLONE BUYER'S GUIDE provides:

- Understanding of the clones and their effect on the entire computer industry
- Analysis of IBM compatibles — limitations and hidden costs
- Guidelines for buying an IBM XT clone

Author Edwin Rutsch, founder of the nation's first XT clone users group shares his expertise in this clear, concise, delightfully illustrated, "reader-friendly" book.

Ask for the book in bookstores or detach and mail

Please send _____ copy(ies) @ $9.95 $_____
Postage and handling add 2.00
Ca. residents add $.65 per book, sales tax _____
Total enclosed _____

Name _____

Address _____

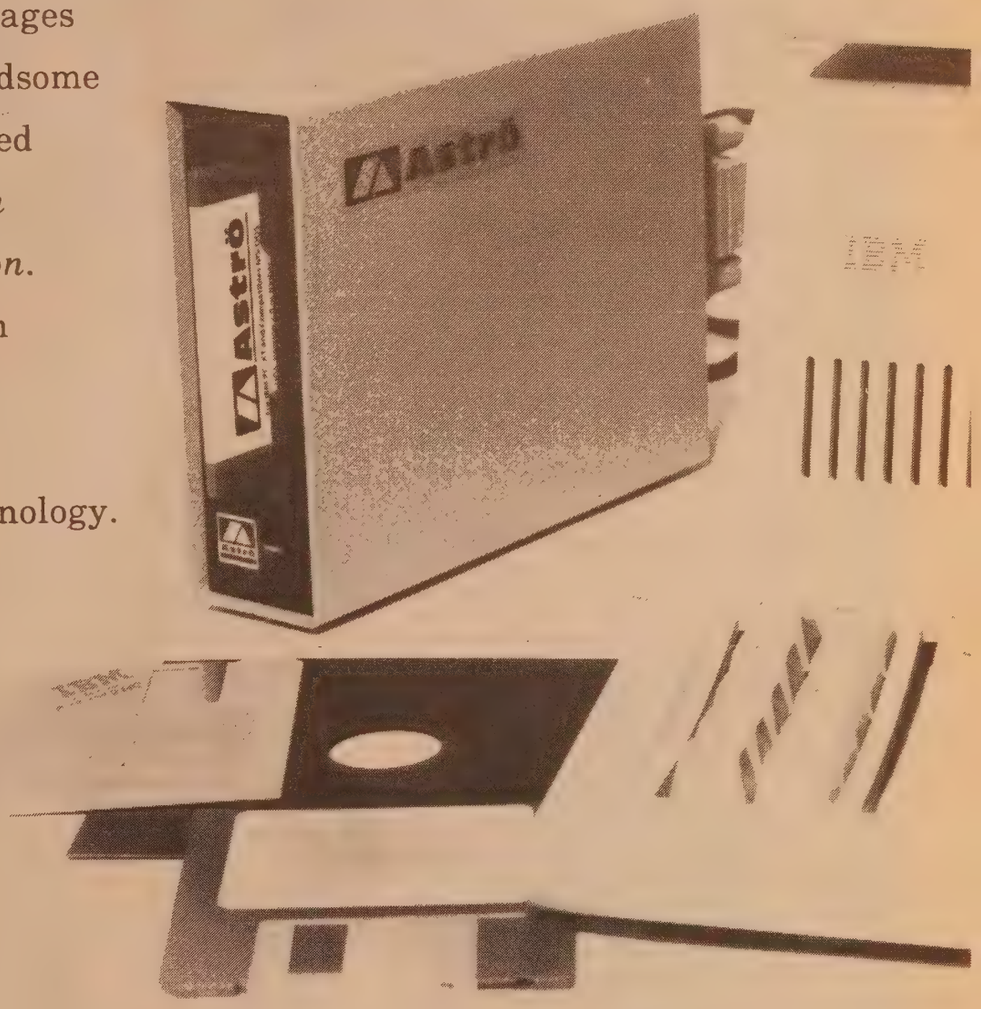
City _____ State _____ Zip _____

Modular Information Systems, 431 Ashbury St., S.F., CA 94117

IBM Power, ASTRÖ-Style

Either way, you can't go wrong with **ASTRÖ**'s disk drive.
We're talking about our newest and fastest 730K 3.5" floppy disk drive.

ASTRÖ EXT1 external disk drive packages these exciting new components in a handsome and compact unit. This unit may be moved quickly and easily from *system to system* without *tools* or *hardware reconfiguration*. It simply connects to the external 37-pin D-connector on standard IBM floppy diskette controllers. This allows a new up-grade to your PC with the latest technology.



ASTRÖ's software allows you to access files under MS-DOS/ PC-DOS version 2.0 or later. So there is NO need to change your current DOS to DOS 3.2 and you have complete compatibility with the formats of IBM Convertible, TOSHIBA lap top and many more...

Ask about our special offer and low cost models!

Price from $225

To order or for more information call:

(408) 727-5599

ASTRÖ Systems, Inc.
Corporate Headquarters
807 Aldo Avenue #106
Santa Clara, CA. 95054

Rhamdec
486 Ellis Street
Mountain View, CA. 94043
(415) 965-3251

UNIX

Hands On—Informix-SQL

By Bennett Falk

Database development in UNIX is not just the province of consultants; there is no intrinsic reason for the construction of a database under UNIX to be appreciably harder than database development on a PC, given the right tools for the job. Among the database management products available for UNIX computers, *Informix-SQL* is an excellent example of how a powerful database development apparatus can be packaged in a form that any computer user can master.

Relational databases generally store data in two-dimensional tables, with columns representing a common field of data (say, ZIP code in a table that contains address information) while rows represent records, or data from all of a table's columns relevant to one case (for example, an entire address).

A good relational database should have commands to allow the user to manipulate tables in a variety of ways. Among other desirable features, a relational database must have the capacity to "select" any row or group of rows from a table, to "project" any single column or group of columns from the selected table, and to "join" tables logically, producing new data structures from which selections and projections can be made.

BUILDING A DATABASE

To see how *Informix-SQL* accomplishes selections, projections and joins, we need a small database. We can start building one by giving the command that starts *Informix-SQL* (typing "**isql**" and pressing return in response to the UNIX shell prompt). After a brief sign-on message, the screen clears and the following menu appears at the top of the screen.

```
INFORMIX-SQL: [Form]
Report Query-language User-menu Database Table Exit
Run, Modify, Create, or Drop a form.
---------- test ----------  Press CTRL-W for Help ------
```

Choose the "Database" option, and a sub-menu appears. The sub-menu includes options for creating, dropping, and selecting a database. When the "Create" option is chosen, the user is prompted to enter the name of the database to be created; assuming that no conflict exists with an existing database name, the database dictionary, itself a set of database tables, is created.

Once you've established the system tables for a database, you can build the user's tables. Selecting the "Table" option from the main menu will bring up a sub-menu with the options Create, Alter, Info, etc. Choose "Create" from this menu, and you'll be prompted to enter a name for the new table; assuming again that there are no conflicts with existing table names in the current database, the following screen will appear:

```
CREATE TABLE people : [Add]
Modify  Drop  Screen  Exit
Adds columns to the table above the line with
the highlight.
--- Page 1 of 1 --- test ----- Press CTRL-W for Help ---
Column Name     Type    Length    Index    Nulls
[       ]
```

Using this screen, assign names, data types, and index types to the columns of the new table. *Informix* allows nine distinct data types: character, long integer, short integer, long floating point, short floating point, decimal, money, date, and serial. Indexes can be added to individual columns or combinations of columns, and can either allow or disallow duplicate values in the columns they are attached to. Finally, columns may be set up to allow or to prevent entries with "null" or missing data.

If the screen above were used to build a table to contain personnel records, it might look like this when completed:

```
CREATE TABLE people : [Add]
Modify  Drop  Screen  Exit
Adds columns to the table above the line with
the highlight.
--- Page 1 of 1 --- test ----- Press CTRL-W for Help ---
```

Column Name	Type	Length	Index	Nulls
[personnel_id]	Serial		Unique	No
first_name	Char	15		Yes
last_name	Char	20	Dups	Yes
address	Char	20	Dups	Yes
city	Char	20		Yes
state	Char	2		Yes
zip	Char	5	Dups	Yes
comment	Char	50		Yes

This screen describes a table in which each employee would have a unique identification number (the "serial" data type is a sequential number automatically assigned by *Informix* to each new record added to the table).

Once the field names, data types and index information have been entered correctly, press the DELETE key to return to the menu's command mode. From this point, typing "E" to exit will give the user a choice between building the new table and discarding the information just entered. If we decide to build the table at this point, we are also given the option of saving the column definitions in a file for editing or future reference. When a table is built from the *Informix* menus, "**ised**" creates a script containing SQL statements to add the table to the database. The SQL script for the "people" table looks like this:

```
create table people (personnel_id serial(1) not null,
    first_name char(15),
    last_name char(20),
    address char(20),
    city char(20),
    state char(2),
    zip char(5),
    comment char(50);

create unique index people_1 on people
    (personnel_id);

create index people_3 on people (last_name);

create index people_4 on people (address);

create index people_7 on people (zip);
```

The relational model of database design assumes something more complex than a single table database, so let's add another table to describe jobs to which people might be assigned. The procedure used would be identical to that described above, and the completed schema for the table might look like this:

```
CREATE TABLE jobs: [Add] Modify Drop Screen Exit
Adds columns to the table above the line with
the highlight.
--- Page 1 of 1 --- test ----- Press CTRL-W for Help ---
```

Column Name	Type	Length	Index	Nulls
[job_number]	Serial		Unique	No
job_name	Char	20		No
job_leader	Integer		Dups	Yes
start_date	Date		Dups	No
end_date	Date		Dups	Yes

In this table, there will be a unique record for each job. The schema is set up to allow the same person to work on several jobs; notice that the job leader field has been indexed, but indexed to allow duplicate values for that field in this table. The job leader field will be used to join the people and job tables: the counterpart field in the people table is **personnel_id.** Notice that **personnel_id** is a "serial" field while **job_leader** is an "integer" type field. This is the only instance in which fields to be used in joining two tables may be of different data types. The serial data type can't be used to identify job leaders in the jobs table, because there can be only one serial field per table and there is already a serial type field supplying job id numbers.

USING SQL

The Structured Query Language on which *Informix-SQL* is based should be pretty much the same in any database product that uses it. In *Informix*, the "Query-Language" option from the main menu will produce a menu of commands which enable the user to compose and run SQL queries.

```
RDSQL: [New]  Run  Modify  Use-editor
Output  Choose  Save  Info  Drop  Exit
Enter new RDSQL statements using the RDSQL editor.
---------- test ----------  Press CTRL-W for Help -----
```

Selecting the "New" option from this menu will start an editor (part of the *Informix* menu interface) which allows the entry of new queries. The built-in editor is good for short queries; the "Use-editor" option will start a UNIX editor to allow the user to enter and edit more complex scripts containing large numbers of SQL statements.

Assume that the sample database described above has the following data already entered. The "people" table contains:

```
first_name last_name address city state zip

1 Thalamus Backmatter 1313 Ad Hominem Walk Berkeley CA 94709
2 Edna Beatrice Mudd 3332 Bowdler Street Modesto CA 95911
3 Laurel Echelon 9876 Enigma Circle San Rafael CA 94912
4 Boodie Warbutton 23 Palindrome Alley Wisteria OR 98909
5 Farabundo Dada 777 Draconian Pike Rosetta CA 97234
```

The job table contains:

job_ number	job_ name	job_ leader	start_ date	end_ date
1	Writer's Workshop	4	09/09/1986	02/01/1987
2	Perpetual Motion	5	10/21/1986	02/21/1987
3	Marketing Retreat	3	2/01/1986	12/15/1986
4	Database Development	1	07/01/1986	10/31/1986

Using SQL, all queries are implemented with a "select" statement. To select entire rows from a table, the SQL query need only feature an "*":

```
select * from jobs;
```

The output from this statement looks exactly like the listing of sample data for the jobs table. The selection could be made more specific by adding a "where" clause. This SQL statement would select all rows from the jobs table which refer to finished jobs:

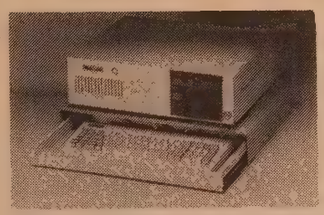
```
select * from jobs
where end_date>today;
```

In this query, "today" is a built-in variable that allows date comparisons with today's date.

"Projections" are accomplished by simply list-

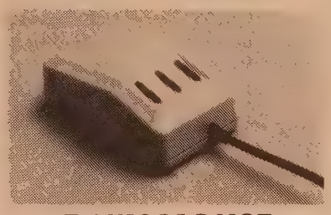
New Year's Special

Order any system before Jan. 31
Choose your free gift



DT-21 EASY DRAWER

OR



Z-NIX MOUSE

XT COMPATIBLE SELF-ASSEMBLY KIT

- 256K RAM on Mother Board
- Monographic Printer Card or Color Graphic Card
- (Fujitsu) Floppy Drive
- 150 Watt Power Supply
- Misumi Keyboard
- Turbo Version Add $30
- AT Style KB-5160 Keyboard Add $10
- Assembly, Burning Test Fee $30
- 90 Days Warranty

$439

Z-NIX AT-286 SYSTEM

- 80286 Processor
- 512K RAM on mother board
- Clock/Calendar with battery backup
- Color Graphic Printer Card or Monochrome Graphics Printer Card
- Floppy Disk Controller/Hard Disk Controller
- 1.2 MB Floppy Disk Drive
- AT Compatible Keyboard
- MS DOS 3.1 included

$1395

Z-NIX TURBO SYSTEM

- Four-layer Turbo Board with 256K RAM on board
- Four-layer Monochrome Graphics Card with Printer Port
- Four-layer Floppy Disk Controller Card
- One TEAC floppy drive
- 135 Watt Power Supply
- One year warranty (Storage Peripherals not included)
- MS DOS 3.1 optional $49

$539

ADD ON CARDS & ACCESSORIES

4 LAYER BOARD PERIPHERIAL

Mother Board w/256K	$179
Turbo Board w/256K	$189
Color Graphic Card	$ 76
Multi I/O Card	$103
Monochrome Graphic Printer Card	$ 84
Disk Controller Card	$ 39

2 LAYER BOARD

Mother Board OK Memory	$ 89
Turbo Board OK Memory	$109
Color Graphic Card	$ 53
Multi I/O Card w/Floppy Controller	$ 69
Monochrome Grpahic Card	$ 59
Disk Controller Card	$ 28
EGA Card	$229
Basic System (Case, KB5160 KB, 150WTP/S)	$143
TEAC Drive	$ 95
Fujitsu Drive	$ 90

ACCESSORIES

Z-Nix Mouse (Mouse System Mouse Compatible)	$ 69
DT-21 Easy Drawer	$ 39
DX-100 Diskette Storage Box	$ 8
DT-31 Copy Holder	$ 12
FD-05 Head Cleaning Kit	$ 5
DD-02 Disk Notcher	$ 2

Manufacturer Representative Wanted

(213) 493-2516

NAKAI COMPANY, INC.

10527 Humbolt Street, Los Alamitos, CA 90720

ing the desired fields. Using the tables above, the following statement could be used to retrieve just the "**job_name**" column from the jobs table:

```
select job_name from jobs;
```

This command simply selects one column from the table and presents it in isolation from the rest of the data the table contains. The following SQL statement would retrieve from the "jobs" table the names of all jobs currently underway:

```
select job_name from jobs
    where start_date<today
    and end_date>today;
```

The "where" clause is also the mechanism by which tables are joined in a select statement. The following command retrieves the names of both the job and the job leader for all current jobs:

```
select job_name, first_name, last_name
  from jobs, people
  where start_date<today
  and end_date>today
  and job_leader=personnel_id;
```

This command resembles the simpler commands in form, but the list of fields that follow the word "select" is drawn from more than one table.

SQL is an excellent query language: it includes many relational operators (among them AND, OR, NOT, IN, LIKE, MATCHES), the ability to "nest" one query inside another, embedded arithmetic operations, and several built-in functions (such as COUNT).

In spite of all this wonderfulness, however, SQL is hardly a complete database management system on its own. It does little to format the results of queries; its "insert", "update", and "delete" statements, though admirably suited to "batch" database operations, are not convenient to use interactively. Even querying a database requires the user to know an awful lot about both the database structure (column names and the like) and the syntax of the query language itself.

Informix-SQL remedies most of these shortcomings by providing a number of programs to serve as a "front end" for its implementation of SQL. The "interactive schema editor" (**ised**) discussed above is one such program. In addition, *Informix-SQL* includes both a report writer ("Ace") and a screen-oriented transaction processor ("Perform"). The report writer provides complete formatting control over the results of SQL queries. The transaction processor, though less explicitly bound to SQL itself, provides an easy and effective way to enter, update, and query data in multiple tables.

BUILDING PERFORM SCREENS

One problem with the Structured Query Language is that its commands for entering and updating data are unwieldy. The "Perform" transaction processor provides a relatively simple way to join tables and to add, update or query records, without knowing either the column names or SQL syntax.

Once database tables have been built successfully, forms can be constructed for entering and querying the data. From the main menu, the "Form" is selected, and a sub-menu appears with these options:

```
FORM: [Run]
Modify  Generate  New  Compile  Drop  Exit
Use a form to enter data or query a database.
---------- test ---------- Press CTRL-W for Help -----
```

Selecting "Generate" from this menu will start the process of creating a bare-bones form. *Informix* will prompt for the name of the new form and the names of the tables to be included in it. Such "default" forms are useful for prototyping; in a real application an editor would be used to paint a more elaborate screen.

Once table selection is complete the form will be compiled, and may be used immediately to enter data. The source code for a default screen using both tables in the "test" database is shown below:

```
database test
screen
{
personnel_id    [f000   ]
first_name      [f001      ]
last_name       [f002      ]
address         [f003    ]
city            [f004      ]
state           [a0]
zip             [f005 ]
comments        [f006         ]
job_number      [f007    ]
job_name        [f008      ]
job_leader      [f009  ]
start_date      [f010    ]
end_date        [f011    ]
}
end
tables
people
jobs
attributes
f000=people.personnel_id;
f001=people.first_name;
f002=people.last_name;
f003=people.address;
f004=people.city;
a0=people.state;
f005=people.zip;
f006=people.comment;
f007=jobs.job_number;
f008=jobs.job_name;
f009=jobs.job_leader;
f010=jobs.start_date;
f011=jobs.end_date;
end
```

The source code for a default form has the same general structure a custom-built form would have. The source code begins with drawings of the screens that make up the form. Any areas that will contain information from the database are delimited with brackets ("[]") and assigned a "tagname." Tagnames are placed just inside each set of brackets in the source code for a form. Anything outside the brackets (field labels, decorative flourishes, and the like) will be displayed just as drawn. Default forms simply use column names for labels; most designers opt for something more descriptive. Curly brackets ("{ }") are used to mark the beginning and end of each screen in the form.

An "attributes" section follows the screen definitions. Here each tagname is assigned to a column from the database using a simple "**tagname=table.column**" syntax. Any other attributes the designer might wish to ascribe to the field can also be assigned at this point. *Informix-SQL* supports about 18 different "attributes," which range from display and formatting niceties to verification and lookup specifications.

Following the attributes, the designer may include instructions which control master/detail relationships between joined tables, embedded calculations, and conditional "branching" during data entry.

"Default" forms contain all the columns from every table used by the form; they provide a natural mechanism for "selecting" whole rows from a table. However, a designer can pick and choose which columns he or she wishes to use in a form; each form can represent a different "projection" of the data.

"Joins" between tables are accomplished in a particularly elegant way in Perform screens. The "attributes" section of the screen's source code is simply modified to allow a single "tagname" to refer to more than one column from the database.

In the code listed above, the **personnel_id** and **job_leader** columns could be joined by modifying the description of tagname f000:

```
attributes
f000=people.personnel_id;
   =jobs.job_leader;
```

In addition, tagname f009 would be deleted from both the screens and attributes sections of the form. The effect of joining tables in a form will be discussed below.

The form serves as a kind of window on the datafiles. A menu at the top of the screen lists the available commands, and the screens appear just as they were drawn in the form specification. Commands are executed by typing a single letter.

No matter how many tables are represented in a form, only one table at a time can be "active." The name of the active table appears in the upper right hand corner of the screen, and any fields from that table are framed in delimiters (by default "[]"). In multi-table forms, the "Table" command can be used to make any other table in the form of the active table. In forms containing joined tables, the "Master" and "Detail" commands can also be used to activate other tables.

To add records using a Perform screen, the operator simply types "a". The cursor then jumps to the first field available for data entry, and the form can be filled out with the operator pressing return or tab to conclude entries into each field. As the user finishes each record, ESCAPE is pressed to add the screen's contents to the database.

Querying requires only that the user press "q" and then move the cursor around in the fields displayed on the screen, entering the values to be searched for. Once the values are entered, pressing ESCAPE executes the query. A count of the number of records satisfying the query is given, and the first hit is displayed while any other hits are queued up for display. These records make up the "current list," and the user can browse through these records using the "Next" and "Previous" commands.

Joining tables in a form can have spectacular results when queries are run: querying the active table will automatically retrieve and display records in those "inactive" tables that the active table joins.

Of course there may be a "one to many" join between the two tables: one record in the active table is joined to several records in an inactive table. As with any query, the first such record in the inactive table will be displayed. To see the rest, the "Detail" command makes the subsidiary table active and queues the records for display. The "Master" command reactivates the table originally queried.

All in all, there is not much that cannot be done with *Informix-SQL*, and the tools that it provides (SQL, Perform, and Ace) are surprisingly easy to learn. These modules give the user a choice of operating styles for working with databases.

To use SQL, you must know the structure of the database and be willing to do a lot of typing while composing your queries. Your reward will be an ability to create ad hoc joins between tables and pinpoint retrieval of just those database columns you want to see.

On the other hand, Perform provides a "form-driven" style of database manipulation. This requires less awareness of the database structure, gives a satisfying visual representation of the data, and simplifies data entry. But the form-driven style lacks some of SQL's flexibility.

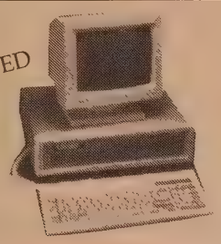
Of course, the forward-looking souls at Informix are not unaware of these trade-offs. Their solution is a dedicated database language, and *Informix-4GL*, a fourth generation extension of *Informix-SQL*, is now on the market. □

STOP SHOPPING!

YOUR ONE STOP SHOP FOR ALL YOUR COMPUTER NEEDS!

Printers, Modems, Accessories, Supplies (Disks, Ribbons, Paper)

FCC APPROVED

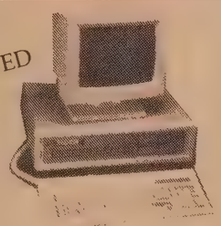


XT SYSTEM w/MONITOR:

640K on 4.77 MHz Motherboard
150 Watt Switching Power Supply
Mono/Graphic/Printer
Serial/Parallel/Clock/Game
Two (2) Floppy Drive w/Controller
Standard IBM Keyboard
Limited One Year Warranty
MS DOS 3.1

$690 Color **$890**

FCC APPROVED

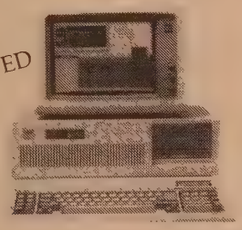


ENHANCED TURBO XT SYSTEM w/MONITOR

640K on 4.77/8MHz Motherboard
150 Watt Switching Power Supply
Mono/Graphic/Printer
Two (2) Floppy Drives w/Controller
Serial/Parallel/Clock/Game
Standard IBM Keyboard
30 Meg Seagate w/WD. Controller
Limited One Year Warranty
MS DOS 3.1

1150 Color **$1350**

FCC APPROVED

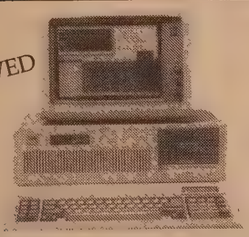


TURBO BULLET w/MONITOR

640K 6/10MHz no wait state
150 Watt Power Supply
Mono/Graphic/Printer
Serial/Parallel/Clock/Game
Two (2) Floppy Drives
Case w/LED & Lock
AT Style Keyboard
30 Meg Hard Disk
Limited One Year Warranty
MS DOS 3.1

1245 Color **$1445**

* FCC APPROVED



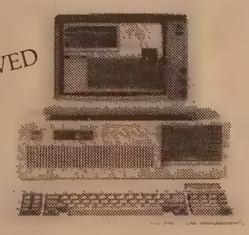
BABY AT w/MONITOR

(AT power smaller size)

512K on 6/8 MHz Motherboard
200 Watt Switching Power Supply
Mono/Graphic/Printer
One (1) 1.2 Meg Floppy Drive
Fixed & Floppy Disk Controller
Serial/Parallel/Clock
Standard IBM Keyboard
Case w/LED & Lock
20 Meg Seagate
Limited One Year Warranty
MS DOS 3.1
* FCC Pending

1530 Color **$1730**

FCC APPROVED



BASIC AT SYSTEM w/MONITOR

512K on 6/8 MHz Motherboard
200 Watt Switching Power Supply
Mono/Graphic/Printer
One (1) 1.2 Meg Floppy Drive
Fixed & Floppy Disk Controller
Serial/Parallel/Clock
Standard IBM Keyboard
Case w/LED & Lock
20 Meg Seagate
Limited One Year Warranty
MS DOS 3.1
*(NOTE: 10MHz Available)

1550 Color **$1750**

(OTHER SYSTEM CONFIGURATIONS ARE AVAILABLE)

MOTHERBOARDS w/o Bios & Mem.

Regular 640K 4.77 MHz
Turbo 4.77/8 MHz
Turbo 10 MHz
AT 6/8/10 MHz
Mini AT 6/8 MHz

EXPANSION CARDS

XT Floppy Cont. 1 port
XT Floppy Cont. 2 ports
XT Multi I/O
AT Floppy Cont.
AT I/O

CASES

XT Slide
AT Slide
XT/AT Slide
AT Mini

POWER SUPPLIES

150W
200W

INTERFACE CARDS

Mono Graphic Printer
Color Graphic Printer
EGA Card

KEYBOARDS

K7 (5150)
5060
5339
5152

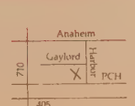
TOO MANY PRODUCTS TO LIST. CALL FOR FULL LINE AND PRICES.

UCR United Computer Resources ™Business Centers

12007 Wilshire Blvd.
Between Bundy & Sawtelle
Santa Monica, CA 90404
(213) 473-5668
(213) 473-6710

17985 Sky Park Circle #C
Main St. Corner
Redhill St.
Irvine, CA 90714
(714) 250-9029
(714) 250-9032

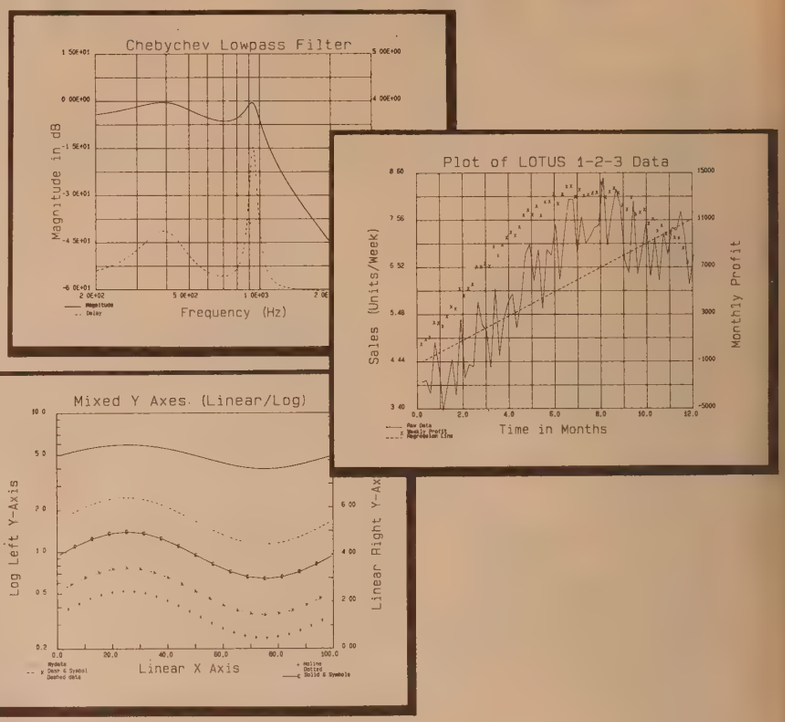
1301 A.W. Gaylord Ave.
Long Beach, CA 90813
Tel: (213) 491-0640
(213) 436-8515
(213) 436-8619

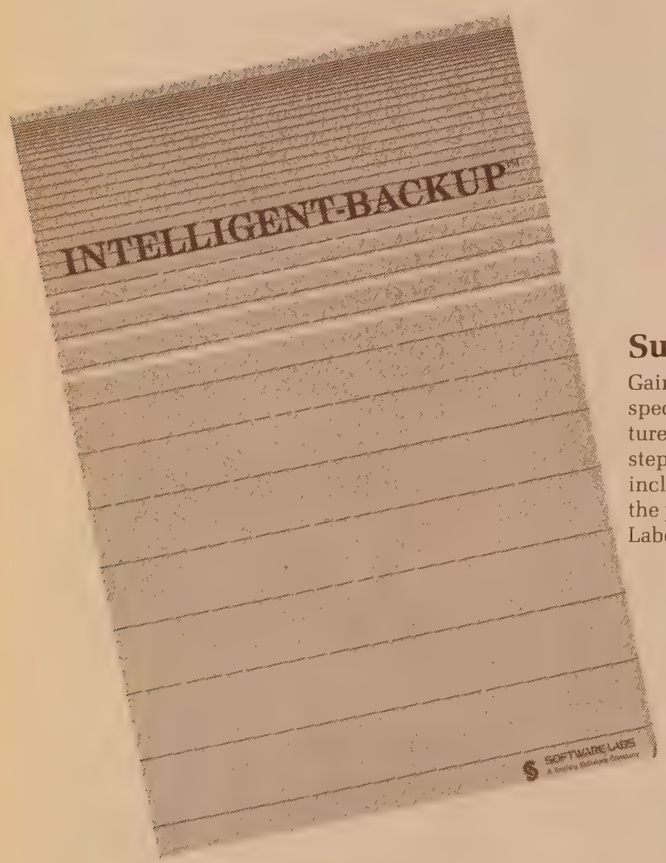


450 S. Fair Oaks Ave.
Pasadena
(818) 440-9821
(818) 440-9822

Seeing Is Believing

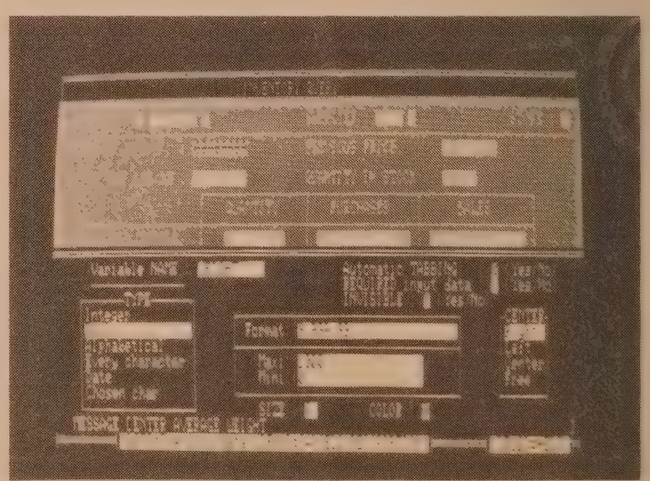
Presentation quality graphs become a snap with *PDP*, a plotter driver program from BV Engineering. Technical and financial data take on a new meaning when plotted on a graph using up to eight different colors. Data is entered manually or from previously generated files such as *Lotus 1-2-3*, *dBASE*, BASIC or FORTRAN. Features include support of two independent Y-axes, multiple plots and labelling, built-in data and template editors, and the ability to draw legends and connect points with dotted or dashed lines. *PDP* is available under the PC-DOS, MS-DOS and CP/M-80 operating systems for $72.95 from BV Engineering, 2200 Business Way, Suite 207, Riverside, CA 92501, (714) 781-0252.





Support System

Gain confidence in your PC file management activities when you use *Intelligent Backup*. Designed specifically for the computer user who has neither the time nor experience to master DOS, this full-featured backup system provides all the technology necessary to make disk storage management a simple step. There's even a daily backup reminder system to give you a nudge as well as a numeric display including elapsed time, number of diskettes, characters, files and directories processed for monitoring the progress of a backup or restore command. *IB* is not copy protected and is available from Software Laboratories, Inc., 202 E. Airport Dr., Suite 280, San Bernardino, CA 92408, (714) 889-0226.



TurboKwik Inc.

Faster, Faster, Faster

Don't get stuck waiting for your 8088-based computer to process information any longer. Ten minutes is all it takes to install *TurboKwik* and increase your computing speed by up to 60%. It features three operating speeds: 6.4 MHz, 6.7 MHz and 7.1 MHz. At $89.95, you get the speed of an IBM AT for less than 10% of the purchase price of most PCs. For more details, contact TurboKwik Inc., 819 Mitten Rd., Suite 15, Burlingame, CA 94010, (415) 692-3102.

High Marks For High Screen

Generating screens is quick and easy with *High Screen*. Its dual structure, made up of a screen generator and a resident driver, provides all the tools necessary for creating screens while drastically reducing source code and development time. Not only that, but screen generation is completely independent of the application and the programming language used so that changes can be made without modifying the program. *High Screen* runs on IBM PC/XT/AT and compatibles with 256K memory and DOS 2.00 or higher. It is presently being offered for $129. Call (415) 397-4666 to learn more. Softway Inc., 500 Sutter St., Suite 222, San Francisco, CA 94102.

ABSOLUTELY NOBODY BEATS OUR PRICES!

YOUR DISK DRIVE SPECIALIST!
CALL NOW QUANTITIES ARE LIMITED, BUY FOR STOCK!

HARD DRIVES

8.5 MB for XT $99
10 MB for XT 125
20 MB for XT 235
20 MB for AT 295

SPECIAL

TANDON 26 MB $295
(TM 703C for XT . . . 45ms)

SUPER SPECIAL

ATASI 46MB $465
(3046 for PC/XT/AT . . . 33ms)

Quantum Q2010 . . . . . 10MB $175
Quantum Q2020 . . . . . 20MB 350
Quantum Q540 . . . . . 40MB 695
Quantum Q2040 . . . . . 40MB 750
Quantum Q2080 . . . . . 80MB 1195
40 MB 27ms 649
85 MB 1095
140 MB 2295
190 MB 2995

CONTROLLERS

Western Digital XT Controller $99
Western Digital AT Controller $189

WHEN YOU THINK OF DISK DRIVES THINK OF JB TECHNOLOGIES

FLOPPY DRIVES

for IBM

FULL HEIGHT

WS FDD 211-5 . . . . . 360K $49
CDC 9409 . . . . . 360K 70
TANDON TM100-2 . . . . . 360K 89
(Single Sided Available)
TANDON TM100-4 . . . . . 720K $59.95

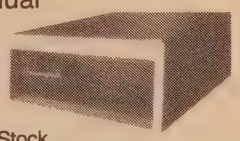
HALF HEIGHT

MITSUBISHI 4851 . . . . . 360K $85
MITSUBISHI 4853 . . . . . 720K 85
OTHER BRANDS AVAILABLE FROM $59

PHOENIX SUBSYSTEM

60 meg Archive Tape Back-up, 20 meg Hard Disk, Controller, Software, Cables, and Manual
Suggested List $2295

LIQUIDATION PRICE $795



More Drives In Stock

ATTENTION APPLE LOVERS

IBM to Apple/Apple to IBM
Let your Apple II at home support your IBM/PC at work. The NEW **ENVOY** The Apple Compatible IBM diskette sub-system. Prices start at $349
Apple Compatible Disk Drives $49
Apple Disc II $69
Case $15
Cable $10

OEM & DEALER INQUIRIES INVITED PROFESSIONAL LIQUIDATORS (WE BUY & SELL) 90 DAY GUARANTEE ON ALL PRODUCTS

jb TECHNOLOGIES, INC.

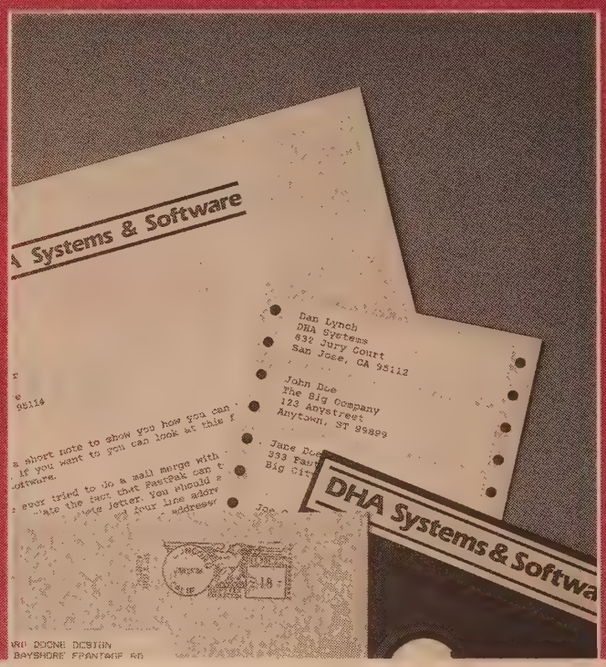
(818) 709-6400 (818) 884-8500

21011 Itasca Street, Unit "F" Chatsworth, CA 91311

Terms: 1. Visa or Mastercard Welcome
2. CA Residents add 6% Sales Tax
3. C.O.D., Cashier Checks or Money Order Only

FastPak™ Mail

Form letter generation, mailing list management, label printing, and more.



If you mail more than ten letters per week, you need FastPak™ Mail!

For mailing list management, form letter generation, and label printing, FastPak Mail is the clear choice for maximum simplicity and power.

With FastPak Mail you don't have to design screens or memorize complex codes to build a mailing list. You just start. Simple menus and fill-in blanks guide you step by step. You can even transfer names created by some other software program directly from disk to disk.

FastPak Mail adds your mailing list names and addresses to letters, inserts names or "boiler plate" paragraphs from other documents in the body, and even lets you pause during print-out to type in extra material.

For lists of up to five thousand names, FastPak Mail will also:

- ☐ Sort by ZIP code for lower postage rates.
- ☐ Combine two lists and then eliminate duplicates.
- ☐ Mail to selected portions of a list, including every *n*th name.
- ☐ Print three- or four-line labels.
- ☐ Alphabetize for easy name look-up.

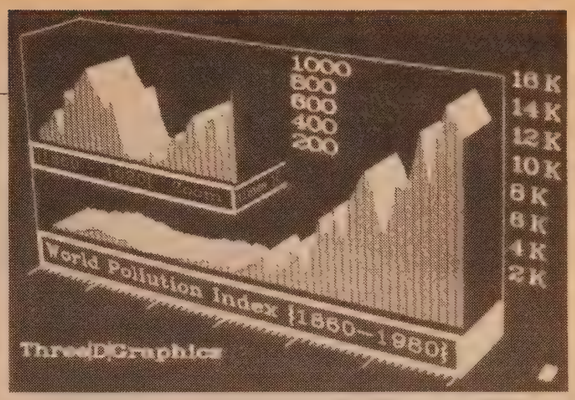
And with ProMail extension, you can perform more sophisticated list management functions with lists of over fifty thousand names.

FastPak Mail runs on the IBM PC and PC compatibles, as well as a variety of CP/M computers. It's compatible with most popular word processors, including WordStar, Easy, PFS Write, Microsoft Word, Multimate, Volkswriter, Leading Edge, PC Write, Scripsit, Le Script, Spellbinder, and many, many more. And at a suggested retail price of $79.95 (plus $159 for ProMail extension), FastPak Mail is a genuine bargain.

DHA Systems & Software

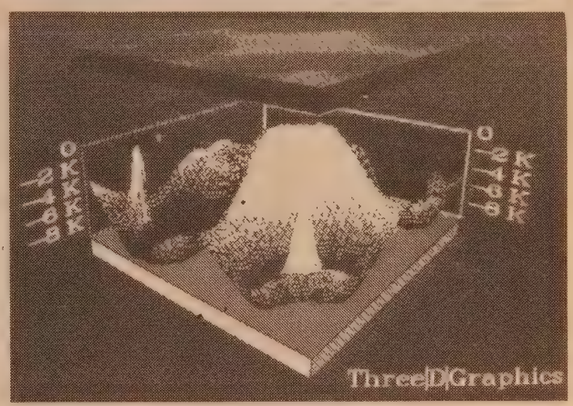
832 JURY COURT / SAN JOSE, CA 95112 / (408) 947-1011

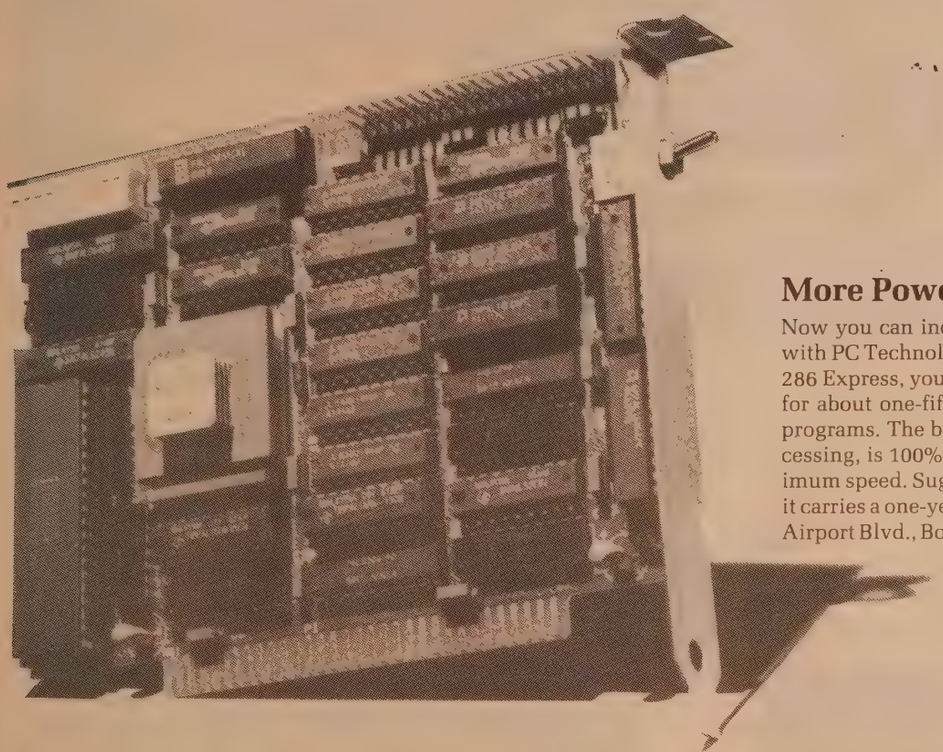
Available at the WHEREHOUSE and EGGHEAD SOFTWARE℠



A Different Perspective

Three-D Graphics has developed another perspective. Their latest data graphing package, *Perspective II*, contains all the features of their *Perspective* package—like the ability to quickly transform data from spreadsheets, word processors and databases into a variety of 2D and 3D graphs—plus the capability of generating over 400 colors. Graphic presentations become more exciting and understandable. *Perspective II* also has the power to pan, zoom or alter picture perspective. The program is ideal for creating slide shows with features such as dissolve and fade, rapid-fire images and animation. *Perspective II* can also produce camera ready art at 300 dpi resolution. An EGA or compatible graphics controller and 512K of memory are required. It will be available next month at a recommended price of $395. For sales and marketing information, call Celia Cushing-Brawley at Three-D Graphics, (213) 459-7949.





More Power To You

Now you can increase the performance productivity of your PC by 200–600% with PC Technologies' Improved 286 Express half-slot accelerator card. With the 286 Express, you endow your IBM PC, XT or compatible with the speed of an AT for about one-fifth the price — and there's no need to re-train users or convert programs. The board is easily installed, switches between 80286 and 8088 processing, is 100% software compatible and contains 8KB cache memory for maximum speed. Suggested retail price of the enhanced 286 Express card is $595 and it carries a one-year warranty. Need more info? Contact PC Technologies Inc., 704 Airport Blvd., Box 2090, Ann Arbor, MI 48106, (313) 996-9690 or (800) 821-3086.

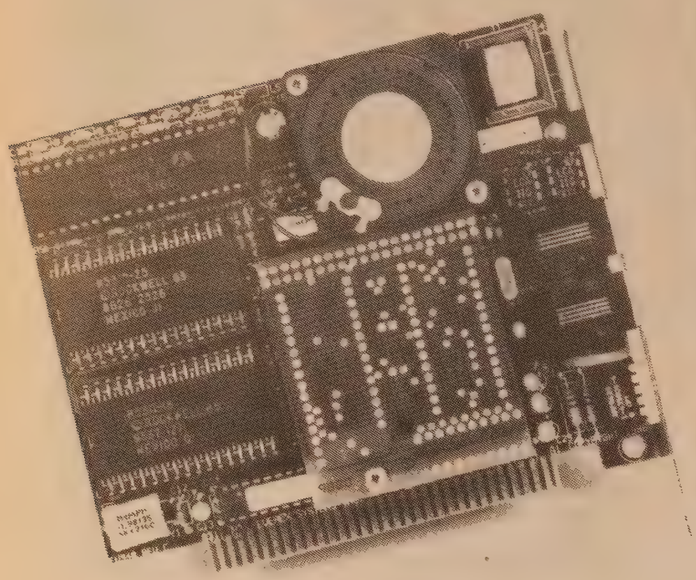
WORDS & FIGURE$™

Words & Figures

There's a new *Lotus 1-2-3*(1A) compatible spreadsheet program available for all those folks just dying to write about numbers. *Words & Figures* has all the features of previous releases, like larger spreadsheet size and performance power, plus the ability to switch to word processing and back again. Better yet, you can split the screen to see both words and numbers at the same time. A built-in auditor for tracking errors and cells which contain circular references is also included in the package. *Words & Figures*, which is not copy protected, is available for $195. Contact Lifetree Software, Inc., 411 Pacific St., Monterey, CA 93940, (408) 373-4718.

Make The Connection

The interface specialists at Sunnyvale's Integrated Marketing Corporation are offering two ways for users to make the right connections. Their parallel to serial converter is designed to convert parallel data from a Centronics interface (Input DB-25 Male Connector) to RS-232C serial data (Output DB-25 Male Connector). The serial to parallel converter takes RS-232C serial data (Input DB-25 Female Connector) and converts it to Centronics parallel data (Output 36 Pin Male Amphenal Connector). Both retail for $79.95, include a ten foot cable, support DTR handshaking, and are powered by an external 9-volt power supply. IMC also markets an auto switch peripheral sharing device which enables from two to six workstations to share the same printer. There are six models to choose from: 3 serial in/ 1 serial out ($149.95), 6 serial in/ 1 serial out ($249.95), 3 serial 3 parallel in/ 1 serial out ($229.95), 3 parallel in/ 1 parallel out ($149.95), 6 parallel in/ 1 parallel out ($229.95), and 3 serial 3 parallel in/ 1 parallel out ($229.95). To order, call (800) 621-0854 ext, 309. Integrated Marketing Corporation, 1031 E. Duane, Suite H, Sunnyvale, CA 94086.

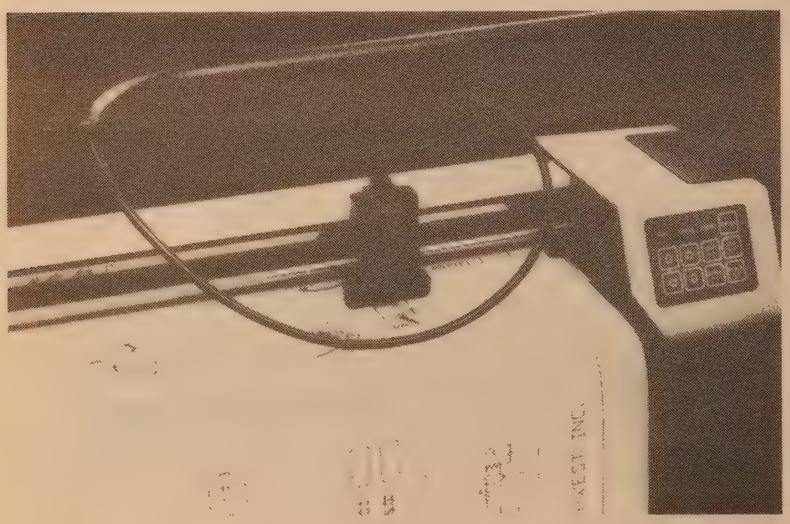


Marvelous Modem

Everex has announced a 2400 baud modem, the EVERCOM-24, which provides Hayes, Bell 212A/103, CCITT V.22 and V.22bis compatibility on a half card size. It is designed to give superior performance on noisy communications lines and includes auto dial, auto answer, auto redial, auto data transfer rate adjustment, and auto data-to-voice switching. It features full or half duplex operating modes, call progress monitoring and off-hook detection to name a few. The EVERCOM-24 is priced at $289. If you need more details, call Vik Vakil at (415) 498-1111 or write Everex Systems Inc., 48431 Milmont Dr., Fremont, CA 94538.

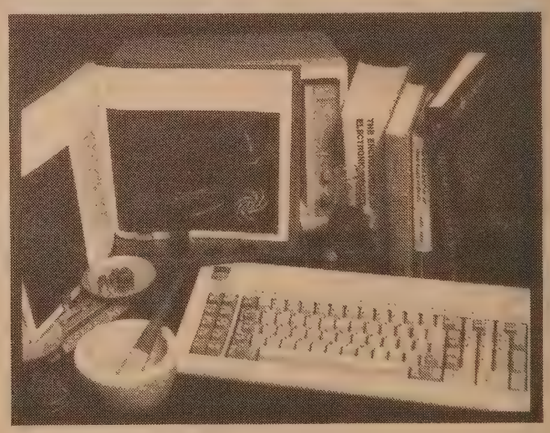
Profit Technology's Breakthrough!

Breakthrough!, from New York-based Profit Technology, is a menu-driven, integrated software package designed for business professionals involved in systematic problem solving, creative thinking and accelerated learning. *Breakthrough!* provides an easy avenue for transforming ideas and suppositions into comprehensive insights and feasible answers. The program consists of several components: Interface and Work, which contains eight text editing modes for tackling multiple projects; Thought Triggering and Amplification, which utilizes an extensive business library and 220,000 synonym thesaurus to facilitate conscious and subconscious thought development; and Breakthrough! Tools and Utilities, which enables users to customize programs, generate reports, as well as create and merge files. In addition, *Breakthrough!* includes a windowing-environment/applications-manager, called ProView, which allows users to run up to 250 programs simultaneously (at twice the speed of IBM's *TopView*). The package is being offered for a limited time at $740 (it's usually $822). It requires 512K RAM and comes with nine floppy disks, a user's guide, reference manual and tool kit. There is also a toll-free customer support number. For information, contact Orest Bedrij Jr., Profit Technology, Inc., (212) 809-3500.



SCAN-CAD Can

SCAN-CAD Accessory Model 128 is a new scanning input device that enables you to convert your Houston DMP-50 Series drafting plotter into an automatic digitizer. Now users have an easy and affordable method to input drawings (up to 36" × 48") into their PC-based computer-aided design and drafting systems. SCAN-CAD features a 200 dpi scan head that detects with accuracy lines as small as .007 inch—this makes it an ideal tool for scanning detailed architectural, engineering or other design application illustrations from paper, vellum, acetate film or blueline. For $2995, SCAN-CAD comes equipped with snap-on scan head, cable and cable support assembly, scanner controller expansion card, scanning software, document carrier and operation manual. It requires an IBM PC or AT with 10MB and 640K as well as a Houston Instrument DMP-50 Series drafting plotter. Houston Instrument, 8500 Cameron Rd., Austin, TX 78753, (512) 835-0900 or (800) 531-5205.



Application Reference For Vertical Markets

One of the largest US publishers of computer specialty books, Abacus, has recently introduced a new volume to add to your bookcase. *Science & Engineering Applications* provides PC users with a wealth of information from such fields as biology, chemistry, mathematics, physics and astronomy. Each subject is covered extensively and includes complete program listings in BASIC. Suggested retail price is $19.95. Abacus will also debut *Statistical Applications On the IBM/PC* shortly. For more information on these or other Abacus products, contact Scott Slaughter or Julie Carle, Abacus Software, PO Box 7219, Grand Rapids, MI 49510, (616) 241-5510.

IBM® PC/XT COMPATIBLE

★ F. C. C. APPROVED
★ FULLY ASSEMBLED
★ 100% BURN-IN
★ 100% TESTED
★ 1 YEAR LIMITED WARRANTY

PROFESSIONAL SYSTEM - B — 879.95

- PC/XT compatible 4.77 MHz 8 expanion I/O motherboard
- 640 K RAM Memory on board
- 360 K ½HT. floppy drive
- Floppy disk Controller card
- Monochrom graphic card w/parallel printer port
- 12" high resolution monochrom monitor
- 135W power supply
- PC/XT style keyboard
- Metal case with speaker
- 120 CPS/80 COLM printer w/cable

COLOR SYSTEM

- PC/XT compatible 4.77 MHz 8 Expanion I/O Motherboard
- 640 K RAM Memory on board
- 360 K ½HT. floppy drive
- Floppy disk Controller card
- Color graphic card w/parallel printer port
- 13" high resolution RGB color Monitor
- 135W power supply
- PC/XT style keyboard
- Metal case with speaker

Only 899.95

PROFESSIONAL SYSTEM — 655.95

- PC/XT compatible 4.77 MHz 8 expanion I/O motherboard
- 256 K RAM Memory on board
- 360 K½HT. floppy drive
- Floppy disk Controller card
- Monochrom graphic card w/parallel printer port
- 12" high resolution monochrom monitor
- 135W power supply
- PC/XT style keyboard
- Metal case with speaker

BASE SYSTEM — 589.95

- PC/XT compatible 4.77 MHz 8 expanion I/O motherboard
- 256K RAM Memory on board
- 360 K ½HT. floppy drive
- Floppy disk Controller card
- Color graphic card/ RGB and composite output
- 12" composite amber monitor
- 135W power supply
- PC/XT style keyboard
- Metal case with speaker

OPTIONAL:

20 MB Hard Disk w/W.D. Controller	415.00
Extra 360K Drive	80.00

PRINTER

Panasonic

KX-P1080	215.00
KX-P1080*i*	255.00

RITEMAN

RITEMAN PLUS	190.00
RITEMAN II	275.00
RITEMAN 15	450.00
PRINTER CABLE	10.00

COLOR SYSTEM B — 1159.95

- PC/XT compatible 4.77 MHz 8 expanion I/O motherboard
- 640 K RAM Memory on board
- 2 360 K ½HT. floppy drive
- Floppy disk Controller card
- Color graphic card w/parallel printer port
- 13" high resolution RGB color Monitor
- 135W power supply
- PC/XT style keyboard
- Metal case with speaker
- 120 CPS/80 COLM printer with cable

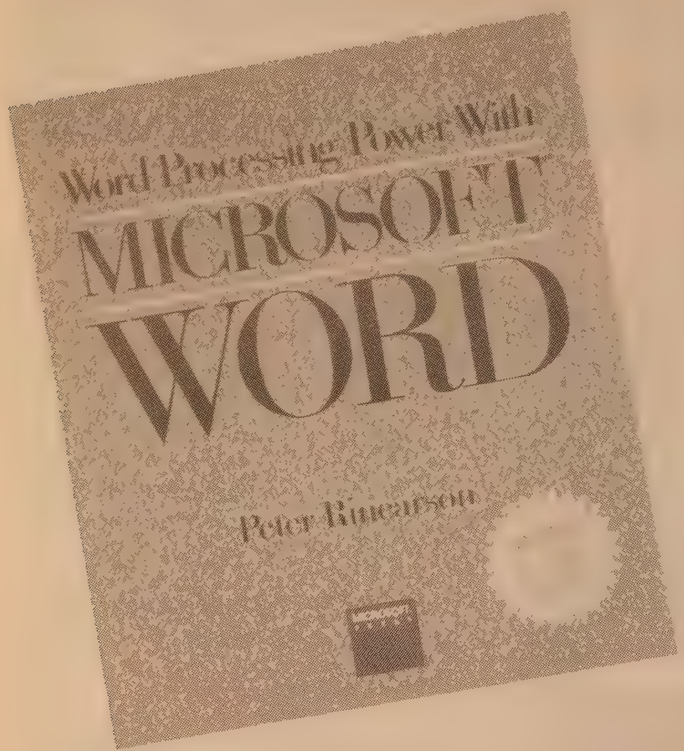
ROMANICUS CORPORATION
1539 W. 139th St. Gardena, CA 90249
9:00 am — 5:00 pm. Monday — Friday

IBM® is a registrated tradmark of int's Bus Machines Corp

VISA MasterCard

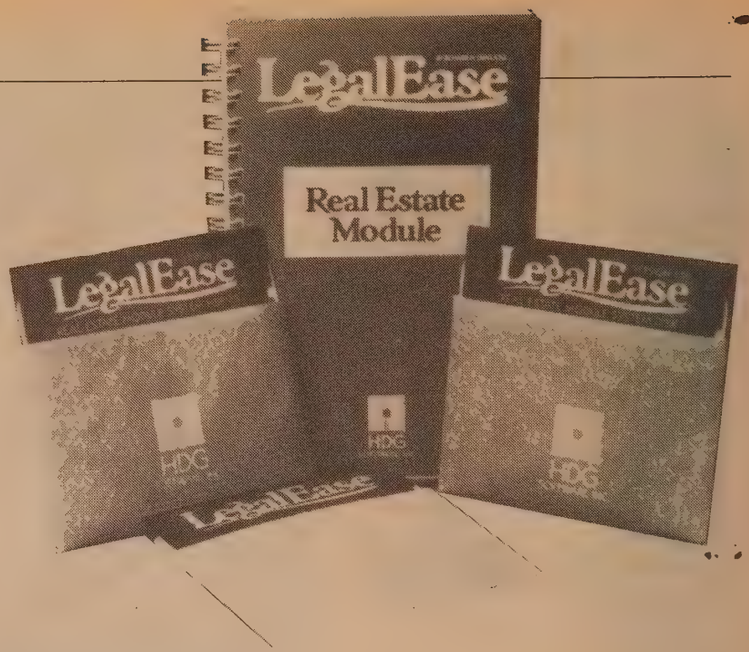
TO ORDER 1-213-327-9300

No C.O.D. No open account. Only prepaid or Credit card orders.
Add 8% shipping and handling fee. California residents add 6 ½% Sales Tax



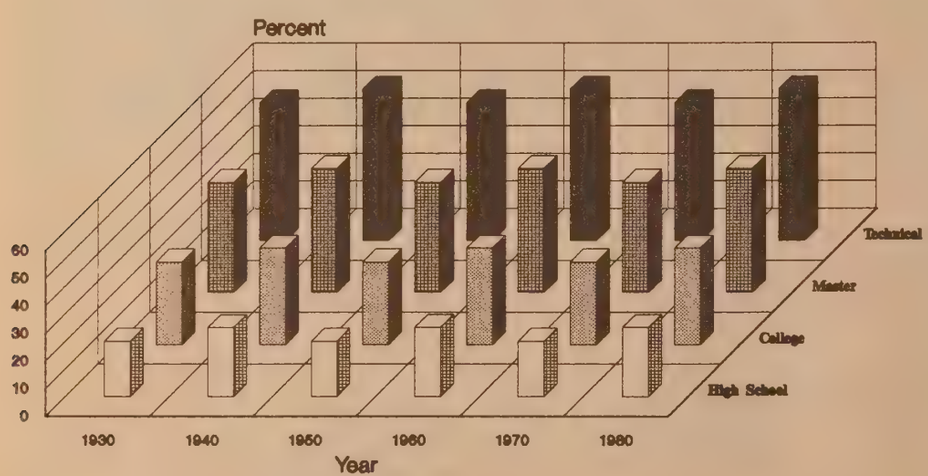
The Word On Word

A revised edition of Microsoft Press' popular book *Word Processing Power With Microsoft Word* is now available. Completely expanded and updated, it includes in-depth info on all releases of *Word*, including v3.1. The book is chock-full of examples, tips, strategies, short tutorials, illustrations and various other "how to" tidbits to save you time and frustration so that you can fully concentrate on your writing. The book is divided into three distinct sections: Learning, Using and Mastering. It concludes with an extensive appendix. Written by Pulitzer Prize Winner Peter Rinearson, *Word Processing Power With Microsoft Word* sells for $19.95. Microsoft Press, 16011 NE 36th Way, Box 97017, Redmond, WA 98073-9717, (206) 882-8080.



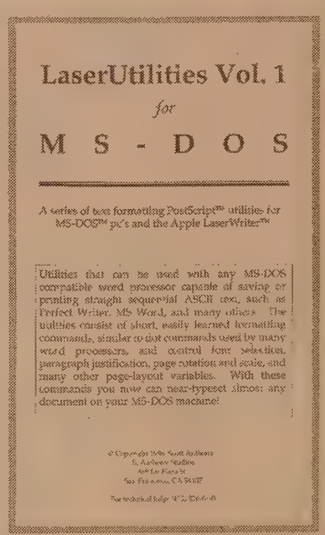
Real Estate Forms

In response to the large number of requests from landlords, developers, agents and tenants, HDG Software has come up with a new package of real estate forms for the real estate industry. Designed to make it less complicated for real estate folks to protect themselves in writing, the module is the first of four supplements to HDG's *LegalEase* package. It contains 52 forms used in buying, building, financing and selling property, rentals, leasing and other real estate transactions. Both *LegalEase* and the *Real Estate Module* run on IBM PCs and compatibles. The complete set of forms is available now for $69.95 from HDG Software, Inc., 54 Whitney St., Sherborn, MA 01770-9998, (617) 651-1881.



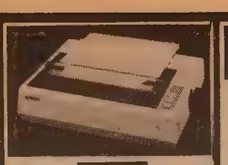
Kinetic Graphics System

The Kinetic Graphics System combines typeset-quality fonts and flexible image formats with a spectrum of colors to produce an end-product worthy of the most important presentation. The entire package consists of four individual modules: Kinetic System, Kinetic Words, Kinetic Graphs and Kinetic Layout. For state-of-the-art presentation, files may be transmitted to a Kinetic Presentations Center (located throughout the US) for immediate production on paper, transparencies, 35mm slides or other media. KGS has a variety of features to give your presentation a professional look. These include: negative line spacing for special effects, 3-D graphic images with shading, and a layout option that enables users to lay images on top of each other. Decide among six fonts, 500 font sizes, a palette of over 250 colors and customized backgrounds for your images. The complete package retails for $695. For more information, contact Kinetic Presentations, Inc., Distillery Commons 250, Louisville, KY 40206-1990, (502) 583-1679, ext 540.


LaserUtilities Vol. 1
for
M S - D O S
A series of text formatting PostScript™ utilities for MS-DOS™ pc's and the Apple LaserWriter™
Utilities that can be used with any MS-DOS compatible word processor capable of saving or printing straight sequential ASCII text, such as Perfect Writer, MS Word, and many others. The utilities consist of short, easily learned formatting commands, similar to dot commands used by many word processors, and control font selection, paragraph justification, page orientation and scale, and many other page-layout variables. With these commands you now can near-typeset almost any document on your MS-DOS machine!

LaserUtilities Vol.1

You don't need a Macintosh or an expensive page layout program to create near-typeset quality printing. With *LaserUtilities vol.1* for Amiga, Apple II and MS-DOS computers, all that is necessary for creating quality output are a word processor that can save or print straight, an unformatted ASCII text, a serial port and a 4-wire null-modem cable. Justified, centered or ragged right lines, automatic page numbering, within-line or paragraph font changes, and boxed-in lines or paragraphs are all possible with *LaserUtilities vol.1*. Call or write: S. Anthony Studios, 889 De Haro St., San Francisco, CA 94107, (415) 826-6193.



EPSON

Epson FX-85 — 160cps, 80 col. $369
FX-286 — 200cps, 132 column .$479
FX-86E — 240cps, 80 column . .$425
FX-286E — 240cps, 132 column$579
DX-35 — 35cps daisywheel . . .$649
EX-800 — 300cps, 80 col. $499
EX-1000 — 300cps, 132 col. . .$659
LQ-800 — 180cps, 24-pin, 80 col $599
LQ-1000 — 180cps, 132 col . . .$749
LQ-2500 — 324cps, 132 col.. $1,149
LX-86 — 120cps, 80 col $249
420i — 400cps, 132 col . . . $1,395

HOMEWRITER 10

Dot matrix printer with near letter quality printing at a home budget price. 100cps draft speed, 80 column.
List $299 *Special* $189

OKIDATA

182P, 120 cps, 80 Col., Parallel . $239
192+ 160 cps, 80 col. Parallel . $389
193+160 cps, 136 col. Parallel. . $595
293E, 240cps, 136 col . . . . . $Call
294, 400cps, 136 col . . . . . $Call
2410P, 350 cps, 136 col. Parallel$1895

IBM

IBM ProPrinter — 200cps, 80 col .$385
Proprinter XL — above but 132 cc$599
IBM QuietWriter II- 60cps, 132 c$1,295

TOSHIBA

P321 — 180cps, 24-pin head. . . $475
P341 — 220cps, 24-pin head. . . $799
P351 — 288cps, 24-pin head. . $999

DIABLO

Diablo 635. . . . . .$975
Diablo D80 IF. $2,250
Diablo 630 API, 40 cps daisywheel printer . . . . . *Sale Price* $1,250

CITIZEN

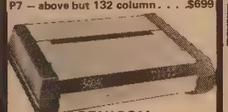
MSP-10 — 80 column. $299
MSP-15 — 132 column $399
MSP-20 — 80 column. $389
MSP-25 — 132 column $559
Premium 35 Daisywheel $550

STAR GEMINI

SB-10, 24-pin, 80 column $450

NEC

3550 - 33 CPS, 203 col., proportional space, bi-directional, parallel. $795
2050 Similar to 3550 but 19 cps $595
P6 — 216cps, 24-pin,80 column. .$499
P7 — above but 132 column. . . .$699



GENICOM

High speed, heavy duty, 18-pin dot matrix printers for business use.
3404 — 400cps, serial interface . . Call

H-P ThinkJet Ink Jet Printer

150cps, 80 col., 11x12-dot text. .$399

H-P LASERJET PRINTER

300cps, quiet operation, serial. $2,325
H-P Laserjet Plus, Model 300 . $3,135
H-P Laserjet 500 w/tray $3,995

BROTHER

M-1109 — 100cps, 25cps NLQ, 80 col, 2K buffer, dual interface. . . $199
M-1509 — 180 cps, (45cps NLQ), 132 col., friction feed and the new push type pin-tractor so first form won't be wasted. IBM and Epson FX-100+ compatible. Very quiet operation. Dual interface $385
Sheet Feeder SF-40 for M-1509. . Call
2024L — 160cps, 24-pin head letter quality dot matrix printer, 136 col. w/tractor, parallel $845
TwinWriter — Two heads are better than one! 160cps dot matrix and 36 cps daisywheel combined into one printer. Parallel interface . . .$985
DM-40 — 160cps, 24-pin dot matrix, 136 col., with tractor, para $899

FORTIS

Fortis DM-2010 — 200cps, 50cps NLQ, 80 colum, emulates Epson FX-286 and IBM graphics printer. . . .$355
Fortis DM-2015 — Similar to DM-2010 but 130 column. $469
Fortis DM-20 — 160 cps dot matrix, 136 col., NLQ mode, both parallel and serial interfaces. $525
Fortis DX-25 — 25cps daisywheel, 132 column, 7K buffer, quiet operation, built-in parallel & serial. . . .$480
Fortis DH45 — Dual head printer, 160 cps dot matrix, 36 cps daisywheel, Epson, Diablo compatible . . $985.
Tractor for 15XL/HR-25. . . . .$119
Keyboard for 15XL. $149
Cutsheet Feeder for HR-15/25 . .$189
SF-200 Feeder for DM-40/2024L .$275

PANASONIC

KX-P1080i — 120cps, 80 column.Call
KX-P1092 — . . . . . Call
KX-P1592 — 270cps, 132 col. . . Call
KX-P1595 — 360cps, 132 col. . . Call
KX-P3131 — 22 cps daisywheel . Call

HARD DISK SALE!

New Low Prices!

- Half height internal hard disks for IBM-PC, XT and Compatibles.
- Boots directly from had disk
- Low power consumption
- Complete with Western Digital or Adaptec controller, manual, cables & mounting hardware

20-MB	30-MB
Seagate 225	Seagate 238
$379	$539

HARD DISKS FOR IBM-AT

High performance full height hard disks. Complete with cable and mounting rails.
20-MB Disctron. $395
20-MB Rodime $450
30-MB Seagate $639
40-MB Seagate $795

EVEREX

20-MB TEAC TAPE BACKUP

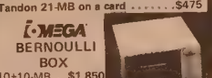
EVEREX 20-MB Internal Tape Back-Up for PC and XT, 4 MB/minute transfer rate. Complete w/control card, cable and manual $575
EVEREX 60-MB Internal Tape Back-Up for AT. Complete with controller, cable and manual. . .$885
EVEREX 60-MB External Tape Back-Up for At. $995

IRWIN 10-MB TAPE BACKUP

Internal half height unit. Direct connects to floppy controller card without taking up a slot. Complete w/$30 tape, software and instruction. $349
20-MB Internal Tape back-Up . . $449

HARD DISK CARDS

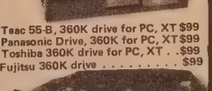
PLUS System, 10-MB, slim design $595
MOUNTAIN, 20-MB $750
Tandon 21-MB on a card $475



i-MEGA BERNOULLI BOX

10+10-MB . $1,850
20+20-MB . $2,400
Non-bootable interface card. . . $150
Bootable interface card. $205

Tsac 55-B, 360K drive for PC, XT $99
Panasonic Drive, 360K for PC, XT $99
Toshiba 360K drive for PC, XT . .$99
Fujitsu 360K drive $99



$105 ea. 360K DRIVE FOR IBM-AT

AST

MULTI-FUNCTION MEMORY CARDS FOR PC/XT

New Low Prices!

SixPakPlus Cards

Memory installed on card ------- *64K* *256K* *384K*
with paralle, serial ports & clock $165 $185 $195
above plus game port ---------- $200 $220 $230

Advantage Card for IBM-AT *128K* - $345 *256K* - $385 *384K* - $425
512K - $465 *1-MB* - $515 *1.5-MB* - $545

PIGGYBACK *512K* - $199 *1-MB* - $255 *1.5-MB* - $295

ADVANTAGE PREMIUM *512K* --- $535 *1-MB* ------ $585
512K piggyback --- $299 *1-MB Piggyback* --- $355

RAMpage Card for IBM-PC/XT ---------- *256K* - $259 *2-MB* - $525
RAMpage Card for IBM-AT ---------- *512K* - $445 *2-MB* - $615

6-PAK PREMIUM CARDS with Parallel & Serial Ports
512K -------- $369 1-MB -------- $455
Daughter Board 512K ----- $195 1-MB ----- $395

MULTI-FUNCTION MEMORY CARD

Fully compatible with IBM-PC and XT. Comes with Ram disk and print spooler software.
Memory installed on card ---------- *0K* *256K* *384K*
w/parallel,serial,game ports,clock- $85 $125 $145

intel Above Boards FOR IBM-PC/XT

64K *256K* *1.5-MB*
128K *512K* *2-MB*
$325 $399 $699
$395 $495 $795

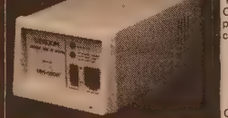
INTERFACE CARDS

Hercules Color Card $145
Hercules Graphics Card. $189
Hercules Graphics-Plus Card . . .$199
Orchid EGA Color Card $355
Orchid Turbo EGA Card $579
Paradise Auto Switch EGA $359
Quadram EGA+ Card. $365
Sigma EGA Color Card. $385
Vega EGA by Video-7 . . . . . .$365
Vega EGA Deluxe Card $465
Enterprise EGA Color Card $199

IRMA 3278/9 Emulator Card . . .$769
Orchid Tiny Turbo 286 — makes your PC/XT runs faster than AT . .$485
Taxan EGA Color Card. $285
Taxan 555 Hi res. color card. . . .$225
Paradise Color/Mono Card $199
Sigma 400H Color for PGS SR-12 $455
Sigma 400L Color for Taxan 440/630/640 monitors $495
Everex The Edge $275
Everex Graphic Edge $295
Tecmar Graphic Master. $465
Tall Tree J-Diskette Controller to hook up 1.2-MB drives in PC/XT . .$229
RS-232 Serial Card $49

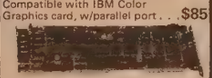
MINI I/O & FLOPPY CONTROLLER

Controller card for 2 floppy drives plus parallel, serial, game ports & clock/calendar w/battery all in one card.$125



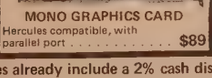
250-WATT BACK-UP POWER SUPPLY

Instant battery back-up system guards against black-out, brown-out and voltage surges. Back-up time 5 to 20 minutes with audio & visual warnings. Compact design.
Special $199.00



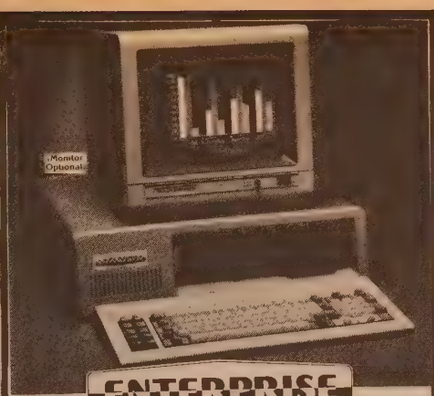
COLOR GRAPHICS CARD

Compatible with IBM Color Graphics card, w/parallel port . . .$85



MONO GRAPHICS CARD

Hercules compatible, with parallel port $89



ENTERPRISE

ENTERPRISE XT-Plus (4.77-8 MHZ)

- Fully IBM PC/XT Compatible
- Full one-year Warranty
- 640K on mother board
- 150-watt power supply
- 8 Expansion Slots
- AT style Keyboard w/LED
- Parallel Port included
- Serial Port included
- Game port included
- Clock/Calendar w/battery
- Floppy Disk Controller
- Compatible w/EGA Color Card & Net working systems
- Made in U.S.A.

$499	$699	$1099	$1645
640K memory No Drive	2-360K drives	2-360K and 20-MB Drives	2-360K, 20-MB and Tape B/U

ENTERPRISE AT (6-8 MHZ)

- 640K – expandable to 1-MB
- Fully IBM AT compatible
- 80286 6/8 MHz microprocessor
- AT-339 styled keyboard w/LED
- W.D. Controller for Floppy & Hard Disks
- 1.2-MB Floppy Drive
- Phoenix BIOS
- Full 1-year warranty
- CAD, LAN, EGA ready
- Made in U.S.A.

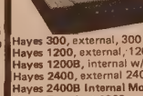
$1119	$1225	$1875	$2675
640K memory 1.2-MB Drive	1.2-MB and 360K drives	360K, 1.2-MB, 20-MB drives	1.2-MB, 20-MB and Tape B/U

Modem Sale!

Hayes 300, external, 300 baud . $145
Hayes 1200, external, 1200 baud $365
Hayes 1200B, internal w/software$339
Hayes 2400, external 2400 baud $579
Hayes 2400B Internal Modem. . .$545
Hayes Transient 1000 . . . . . .$325
AST Reach, 1200 baud *Special* $199
Watson Voice/Data Modem . . . $375
Watson VIP $275
Prometheus 1200 external $295
Prometheus 1200B internal $250

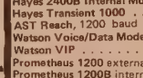
300/1200 BAUD MODEM

Half size modem easily fit into desk top or portable PC. Hayes compatible.
5-yr warranty. $125



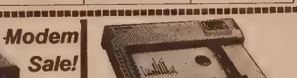
DATASHIELD

Model 100, 6-plug surge & noise protector w/audio & Visual warning. $65
PC-200, 200-watt backup power supply with built-in surge protector . $279
XT-300, above but 300-watt. . . $365
Turbo-350, Super fast 350-watt. .$535
AT-500, above but 500-watt. . . $625
AT-800, above but 800-watt. . . $685



POWER SUPPLY

FCC & UL approved power supply for PC, XT, and desktop compatibles. Built-in EMI filter, over voltage and short current protection. 110/220 V switch selectable. 4 power outlets. Quiet Japan made fan.
150-WATT ---$69



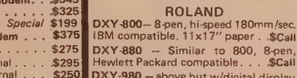
PLOTTER SALE

ROLAND

DXY-800— 8-pen, hi-speed 180mm/sec. IBM compatible. 11x17" paper . .$Call
DXY-880 — Similar to 800, 8-pen, Hewlett Packard compatible. . . .$Call
DXY-980 – above but w/digital display & electro-static paper holder. . Call

HEWLETT PACKARD

7440A Color Pro — 8-pen $975
7475A — 6-pen $1,395
7550A — 8-pen $2,995



Canon PC PERSONAL COPIERS

PC-10 Copier — Manual feed, compact size . . . . . ($795) $509
PC-20 Copier — 100-sheet feeder, 1-19 copies. . . . . ($1,095) $699
PC-25 Copier — Make copies up to legal size from original as big as 10x 14. Enlarge 120%, reduce 67% or 78%. . . . . ($1,395) $925
Black toner/drum cartridge $75
Blue, brown, red cartridge $80
Legal cassette for PC-25 . . . . . $49

EGA COMBO

$699 *complete!*

IBM

PC XT AT

SALE PRICES

All systems include keyboards and disk controllers. Monitors are available at big savings too.

PC
256K, One 360K drive, keyboard $950
256K, Two 360K drives, keyboard $1,050
256K, Two 360K drives, 20-MB hard disk. $1,495
256K, Two 360K drives, 30-MB hard disk. $1,595

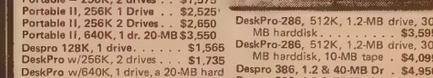
XT
256K, One 360K drive, keyboard $1,625
256K, Two 360K drives, keyboard $1,769
256K, Two 360K drives,20-MB hard disk . $2,149
256K, Two 360K drives, 30-MB hard disk. $2,295

AT
256K, One 1.2-MB drive, keyboard.(68). . $2,550
512K, 1.2-MB drive, 20-MB hard disk . . . $3,325
512K, 1.2-MB drive, 30-MB hard disk (339) $4,175

COMPAQ

Portable — 256K, 2 drives . . $1,575
Portable II, 256K 1 Drive . . $2,525
Portable II, 256K 2 Drives . . $2,650
Portable II, 640K, 1 dr. 20-MB $3,550
Despro 128K, 1 drive. $1,565
DeskPro w/256K, 2 drives . . . $1,735
DeskPro w/640K, 1 drive, a 20-MB hard disk, a 10-MB tape backup . $2,495
DeskPro-286, 256K, 1.2-MB dr. $2,895

DeskPro-286, 512K, 1.2-MB drive, 30-MB harddisk $3,595
DeskPro-286, 512K, 1.2-MB drive, 30-MB harddisk, 10-MB tape . $4,095
Despro 386, 1.2 & 40-MB Dr . $4,950
Despro 386, 1.2 & 70-MB Dr. . $5,895
Despro 386, 1.2 & 130-MB Dr. $7,695



AT&T 6300 COMPUTER

640K memory, 1 floppy drive, serial & parallel ports, clock, Monochrome and RGB color ports, keyboard . . $1,450
Above with two 360K drives---$1,550
640K memory, 1 floppy drive, 20-MB hard disk, serial, parallel ports, clock, mono & RGB ports, keyboard. $1,875
AT&T Green Monitor $225
D.O.S. $65

TOSHIBA LAP-TOP

T1100-PLUS — Two 720K drives, LCD screen, battery operated . . $1,650
T3100 — One 720K drive, 10-MB hard disk, 640K, amber plasma screen. It is a lap-top AT. 115 volt AC.$3,299
Toshiba 5¼" external drive for 1100+ and 3100 only. $445
Toshiba 3½" internal drive for PC $199
Toshiba Modem 1200B for lap-tp .$385

MONITOR SALE

PGS HX12, 12" RGB color . . .$425
PGS HX-12E EGA Monitor . . .$499
PGS SR-12 – SuperRGB Color.$595
PGS SR-12P Color Monitor . . .$695

★★★★ RGB COLOR ★★★★

IBM RGB Color Monitor. $545
IBM Enhanced RGB Monitor . .$689
NEC Multi-sync RGB monitor -$599
Quimax PX-IV — 13" RGB, 720x240 line. Has green switch, tilt & swivel base $445
SONY KV-1311CR — RGB Color Monitor, 680-line resolution, also a Trinitron Color TV with remote control . . .*A Fantastic Buy* $495
SONY SPD1302, 13" EGA Multisyn monitor w/900-line resolution.$625
Mitsubishi XC-1410C, 14" EGA Color. Similar to Compaq EGA . . .$485
Taxan 720 RGB Monitor. $379
Taxan 635 RGB Monitor. $449
Taxan 650 RGB Monitor. $515
Taxan 760 EGA Monitor. $525
Thompson 14" RGB Color monitor w/ green & amber switch. $325

★★★ GREEN SCREEN ★★★

IBM Monochrome, 12", 720-dot .$255
Quimax DM-14G — 13" green TTL, 750x350 resolution, tilt & swivel base included. 1 yr. warranty $155
Samsung SF39A7, 12" flat screen TTL Green monitor w/swivel base .$105
Taxan 115, 12" green composite .$125
Taxan 121, 12" green, 1000x360 dots, TTL monochrome $145

★★★ AMBER SCREEN ★★★

Amdek 300A, 12" amber $149
Amdek 310A, 12" amber $169
Princeton MAX-12, 12" amber. $169
Quimax DM-14A — 12" amber TTL, 750x350 resolution. Tilt & swivel base included. 1 yr warranty. $159
Samsung SM12SFLAA7,12" flat screen TTL Amber monitor w/base. .$109
Taxan 116. 12" amber composite .$129
Taxan 122, 12" amber, 1000x360 dots, TTL monochrome $149

★★★ BLACK & WHITE ★★★

Roland MB-142, 14" reversible black & white TTL monochrome monitor w/ super hi res. 720x350 dots. . $269

SOFTWARE

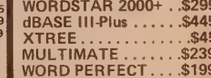
Lotus 1-2-3 Ver. 2. . . .$280
Lotus 1-2-3 Ver. 2.01 5¼" Disk .$319
SYMPHONY $439
WORDSTAR PROPAK$279
WORDSTAR 2000+ . .$299
dBASE III-Plus $445
XTREE $45
MULTIMATE $239
WORD PERFECT . . .$199
SIDE KICK $49
MS DOS 3.2 w/GW Basic. . . . $85

The POWER DIRECTORS

P-22 — A unique control center & surge protector w/4 lighted and a master switches for computer, printer and accessories. It also filters out EMI & RFI interferences $79
P-2 — like P-22 but w/5 switches .$109
P-12 —Has 6 switches & clock. . .$149

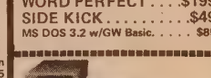
DYNAMIC RAM CHIPS

64K (4164) 150 ns.$1.50 ea. 9 for $10
128K for IBM-AT, 200 ns . . 9 for $54
256K (41256) 150 or 200 ns . 9 for $45



8087 CHIP

Intel 8087-3 high speed math co-processor $135
8087-2 chip for Compaq DeskPro $175
80287-3 chip for IBM-AT $215



SPEED UP YOUR PC/XT

with NEC V-20 processor chip. Direct replacement of the 8088-3 chip. *Now* $39

All goods are brand new and guaranteed. All advertised prices already include a 2% cash discount for full payment by cashier's check, money order or cash. Personal or company checks must clear 3 weeks before we ship. Add 2% for credit card purchases. COD's are accepted for UPS shipments only and require 20% paid deposit and $3 COD fee. No COD's to Canada, Puerto Rico, FPO/APO or P.O. Boxes. Shipping & insurance charges: 3% (Min. $3) of total order value by UPS ground, 5% (Min. $5) by UPS Blue & Parcel Post. P.O.'s accepted from government agencies, Fortune 1000 firms and major institutions. Calif. buyers add sales tax. Prices subject to quantity available, correction or change without notice. You may call for the latest prices.

IBM PC, XT, AT are registered trademarks of International Business Machines Corp.

EASTERN ENTERPRISES, INC.

Mass Merchandising Since 1969
6001 BANDINI BLVD., LOS ANGELES, CA 90040
COME VISIT OUR GIGANTIC SHOWROOM & STORE

VISA MasterCard AMERICAN EXPRESS

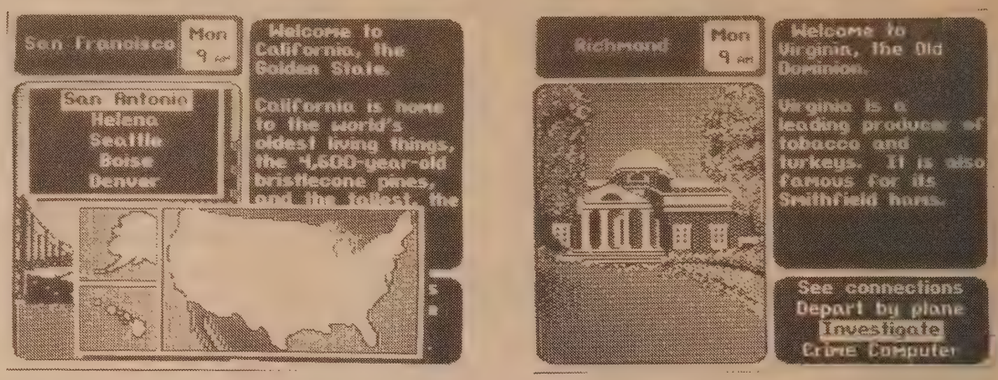
TOLL-FREE (ORDERS ONLY) (800)392-7081
Hours: Monday to Friday 8:30am — 5:00pm Pacific Time
Calif., Alaska & all info *Call* (213)725-3080
FAX: 213-838-5301

EDUCATIONAL

Where In The USA Is Carmen Sandiego?

Published by: *Brøderbund (1986)*

By: *Ken Bull, Gene Portwood and Lauren Elliott*
Published by: *Brøderbund (1986)*
For: *Apple II series (64K)*
List Price: *$45*
Reviewed by: *Mike Markowitz*



Where in The USA is Carmen Sandiego? teaches US geography in an adventure game context.

It is a dark and stormy night, somewhere in Europe. A blonde woman climbs over the gray stone wall of a fortress-prison and slinks away. Too late, the alarm sounds and the searchlights play over the empty fields. Carmen Sandiego has escaped, and America's most cherished treasures are in danger. No, Carmen Sandiego is not the head cheerleader for the Chargers. Carmen and her vile gang are thieves. You are a detective. This is an educational adventure game. You are going to learn a bit of deductive logic and a lot of U.S. geography, painlessly.

To get your assignment, you must sign in. The program will remember your name and keep track of your promotions. You begin in a randomly chosen city, where some item of local importance has been stolen. There are 51 cities (one for each state and the District of Columbia) and 16 villains.

Being intended for younger players (ages 9 and up), the game does not overwhelm you with choices. You can investigate, enter clues about the suspect into your "Crime Computer," check the outgoing flights, or pick your next destination. In each city there are three locations to investigate, such as a Library, a Tourist Bureau and a Sports Arena. The clues you gather help you track the suspect from city to city, and build up a profile: sex, hair color, favorite food, music, sport and hobby. The computer will display a list of suspects that fit the description, and issue an "arrest warrant" when you have narrowed down the list to one name.

The screen display format is clear and attractive. A large window shows a high-resolution color picture symbolic of the city or state (a Hawaiian volcano, the Oregon Coast, the Las Vegas Strip, a Memphis blues singer, etc.). Many of the pictures have nice touches of animation, such as lightning flashes over the Grand Canyon or smoke rising from factory stacks. A smaller window shows a paragraph of descriptive text for each city, then serves to display your clues. As you close in on the suspect, you may catch a glimpse of one of his henchmen in this window. When you get really close, you are warned by bombs, knives and other missiles zipping across the window. When you have tracked the villain to his hideout, you are rewarded with an amusing animated chase scene, including music.

From any given city, you have four or five choices for your next city. A small U.S. map pops up when you make your choice, and the program draws a line from your starting point to your destination.

Nobody does Apple II graphics as well as the programmers at Brøderbund. They have been at it for years and they know all the tricks. Like most educational software intended for younger users, *Carmen* deserves a color monitor. The program accepts keyboard or joystick input, but does not support the Apple mouse.

An earlier program, *Where In The World Is Carmen Sandiego*, was packaged with a copy of the current *World Almanac*. This package includes Fodor's *U.S.A. Travel Guide*, an 800 page softcover filled with tourist information. I cannot resist one quotation:

> Once the poor stepchild of San Francisco, Oakland has added some major attractions of its own. The Port of Oakland boasts excellent facilities. The attractive, huge Alameda sports complex is home to professional football and the Oakland Athletics. Berkeley, Oakland's next-door neighbor, is the site of the magnificent University of California.

(The Santa Fe Bar and Grill is rated "expensive, Creative cooking. Art Deco ambience." Spenger's gets only a laconic "popular seafood restaurant." Chez Panisse didn't make the list.)

The idea is that you will use the book to interpret the clues you pick up in the course of the game and track down the villain. If you know your native land pretty well you can get by without cracking the book. There is a large folded map of the U.S. with the simple, clear instructions for the program printed on the back. There is also a humorous "Scrapbook" of Carmen's gang, with various Brøderbund employees posed as the villains.

Where In The USA Is Carmen Sandiego? is great fun. It has a sense of humor that will appeal to young users. It contains a wealth of solid information about the United States, especially those parts where hardly anybody lives anymore. Any U.S. geography class in the elementary or junior high grades could use this program to good advantage. (Brøderbund, 17 Paul Drive, San Rafael, CA 94903-2101.)

Continents And Countries

Published by: *CNS Software (1985)*
For: *Apple II (48K)*
List Price: *$55.95*
Reviewed by: *Mike Markowitz*

The neglect of geography in American schools is a national scandal. In one state, a recent study found that 40% of graduating high school seniors could not locate *Russia* on a world map! *Continents And Countries* from CBS Software is a series of computer-aided instructional activities intended to support the teaching of geography at any level from grade 5 to grade 12.

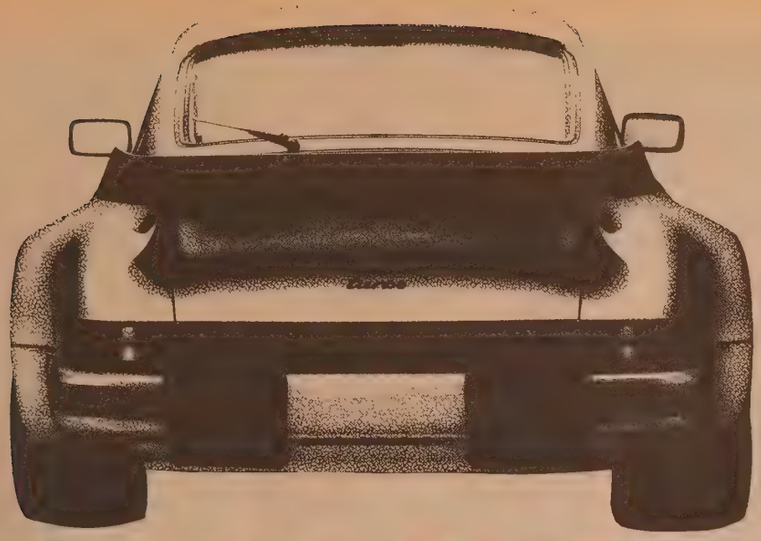
To sugar-coat the bitter pill of learning, these activities are intended to be "fun." To get around the typing barrier, which prevents many learners from using a computer effectively, the package includes a flexible vinyl keyboard overlay. The 37 keys used in the program are labeled and color-coded. (It may be difficult to use these overlays with certain Apple clones that have slightly different keyboards.)

There are four independent activities in the program. *Country Computer* is a relational database of 142 countries that can be sorted and searched by continent, area, population or per capita income. The display shows a world map in one window, the current search criteria in another window, and your list of selected countries on the rest of the screen. You can move the cursor to highlight any country on the list, then press the "Tell Me More" key to open a window showing the flag, vital statistics, form of government, languages and religions (up to two languages and religions are displayed, which is unfair to countries like India...). When a country is selected, a flashing dot locates it on the world map.

Nation Combination is a kind of simple card game. You can play against the computer or a human opponent. The computer deals out four countries (represented by flag symbols and the three-letter Olympic abbreviations) to each player. Another country is turned "face up" at the top of the screen and you must "match" this country with one from your hand, on the criterion of language, religion, government or continent. Your "match" moves to the top of the screen, replacing the previous country. The first player to discard all the countries in his "hand" is the winner. If you cannot make a match, the computer deals you out yet another country. As the "cards" are dealt out you see an animated spinning glove that is one of the finest graphic effects I have ever seen on an Apple screen.

Geo 21 is a "card game" based on "21." The program deals each player one country randomly. The area of each country is displayed on a color-coded bar graph. The object is to amass the most real estate without going over a limit. Like "21," there are only two choices: "hit" (take another card) or "stand."

Flag Frenzy is an arcade-style game demanding quick reflexes and good judgment. The screen displays six flagpoles. Your player can jump left or right to reach the top of any pole. When the game starts, animated "hoisters" start raising flags on each pole. A window gives you a target continent, for example: "jump only on countries in Africa." You score one point for standing on the right pole when a flag of the target continent reaches the top. If you get caught on the wrong flag, your turn ends. The game uses 30 distinctive, easily recognized flags, evenly divided among six continents. You really need a color monitor for this activity. Despite the limited resolution of Apple color graphics, the flags in *Continents And Countries* are generally quite good. The only error I noticed is Libya, which was given its old red, white and black flag, rather than Khaddafy's current solid green banner.



TOP SPEED
157 miles per hour

PERFORMANCE

Silver XT Turbo system w/10 MB hard drive
TOP SPEED 8 MHz per second

- 640K TURBO BOARD w/640K RAM
- 8088-2 MICROPROCESSOR
- 4.77 & 8 MHz SWITCHABLE
- FLOPPY DISK CONTROLLER
- 1 360K FUJITSU DISK DRIVE
- 10 MB HARD DISK W/CONTROLLER
- MONOCHROME GRAPHIC CARD
- AT TYPE KEYBOARD
- TTL MONITOR

$799

OTHER SYSTEM KITS

BASIC 640-XT SYSTEM
- 640K MOTHERBOARD W/256K RAM
- 8088 MICROPROCESSOR
- 4.77 MHZ
- 1 360K FLOPPY DRIVE
- MONOCHROME GRAPHIC CARD W/PRINTER PORT
- FLOPPY DISC CONTROLLER

$499

BASIC 640-TURBO SYSTEM
- 640K TURBO BOARD W/256K RAM
- 8088-2 MICROPROCESSOR
- 4.77 & 8 MHZ
- 1 360K FLOPPY DRIVE
- MONOCHROME GRAPHIC CARD W/PRINTER PORT
- FLOPPY DISK CONTROLLER

$539

BASIC AT SYSTEM
- 1 MB AT COMPATIBLE BOARD W/512K BOARD
- 80286 MICROPROCESSOR
- 6 & 8 MHZ
- 1 1.2MB FLOPPY DRIVE
- HARD/FLOPPY DISK CONTROLLER W/CABLE

$1249

ALL SYSTEMS INCLUDE: MONOCHROME MONITOR, KEYBOARD, POWER SUPPLY, 1 YEAR WARRANTY INCLUDING PARTS AND LABOR.

PRINTERS

Okidata 182	$210
Okidata 192 plus	$340
Toshiba 351	$949
Epson LQ 800	$469
LX 86	$245
Citizen 120D	$195
C. Itoh Riteman II	$240
Panasonic P 10801	$239
Adeus CP 2000	$189

MONITORS

Taxan 635	$375
Taxan 650	$455
TAXAN 720 RGB	$370
Taxan 760 EGA	$455
TTX 1410 RGB	$269
Samsung TTL	$75
Samsung Composite	$69
NEC Multisync	$569

CARDS, ETC

Baby AT Turbo Mother Board	$435
Color graphic	$52
Disk I/O	$75
Mono graphic w/printer port	$65
640K Mother Board	$99
640K Turbo Mother Board	$110
Taxan 560 EGA Card (auto switch)	$280
Seagate 20MB w/controller	$355
Seagate 30MB w/controller	$390

PRINTER OF THE MONTH
Toshiba P321

216/72 cps, Par/24 Pin. 80 column **$459**

ELCO COMPUTERS

Showroom 2 S. Garfield Ave #5, Alhambra
(818) 300-8562

Office: 215 S. Raymond, Alhambra
(818) 284-3281

Historians and political scientists can argue endlessly over what is and is not a "country." The authors of *Continents And Countries* have made some odd choices, however. The database includes Monaco and Liechtenstein, which are really tax shelters for European aristocrats, rather than sovereign nations. Madagascar, an island nation of ten million people, was left out, and, incredibly, so were Cambodia and El Salvador. We might wish to pretend that little El Salvador never existed, but it should not vanish from the geography curriculum so easily. The program notes simply say that "due to memory limitations, some countries were not included." The program should have been developed for 64K machines (at least). 48K is no longer adequate for serious educational software on the Apple.

The Country information in the program is generally accurate as of mid-1985. Unfortunately, the political world does not hold still, and some of the descriptions in the database are already outdated. Iran, for example is listed as a "Constitutional Monarchy." This has not been true since 1978. Nicaragua is described as a "Military" government, but South Africa's government is politely described as "Prime Minister." Religions are listed for communist countries (like North Korea) where religion is more or less extinct.

A 30-page Program Guide booklet clearly explains how to use the package. It contains several errors: "the African nation of Bhutan" is in Asia (did the authors mean Burundi?); Vanuatu, the former New Hebrides islands, has its name misspelled; Vostok in Antarctica is a Soviet research station, not a "military outpost." Such errors would not have gotten past careful editing and review by professional geographers. This kind of sloppiness would not be acceptable in an application program for business. The same standards should apply to educational software. A "glossary" defines various forms of government and religions in terms that are too abstract and jargon-ridden for the reading level of the intended audience.

Despite the excellent keyboard overlays (one for the II+ and another for the IIe or IIc) the user interface in the program is not well-designed. For example, you can only scroll downward in a list to select a country. If you "overshoot" you have to scroll all the way to the end of the list, then start over from the top. The way the search criteria are set up in the database may be confusing to some learners: the default criteria start with the smallest area, population and income; left and right arrow keys change the setting to the next biggest or smallest country in the database, and a "swap" key toggles the search between "everything greater than" and "everything less than" the setting. The scheme is quite sophisticated, but needlessly complex. The manual provides some helpful hints for the teacher, but a student using the package alone could easily get lost.

The opening screen of the program is accompanied by a medley of national anthems. A key with a musical note symbol can be used to turn off the sound effects. This is a nice feature for classroom use. The program disk, manual and keyboard overlays are nicely packaged in the sort of plastic box used for VHS-format video tapes. This is much better for libraries than the flimsy cardboard packages most software publishers use.

Continents And Countries is disappointing, considering the excellent products we have come to expect from CBS Software. It is probably more up-to-date than the geography books in many schools, but the information in the program will rapidly become obsolete. It should be updated and corrected, with more attention to accuracy and less emphasis on flashy graphics and sound effects. (CBS Software, 1 Fawcett Place, Greenwich, CT 06836.)

BOOKS

The Art Of Desktop Publishing

By: *Tony Bove, Cheryl Rhodes, and Wes Thomas*
Published by: *Bantam Books*
Price: *$18.95*
Reviewed by: *Scott Loftesness*

The Art Of Desktop Publishing provides an excellent introduction to the many aspects of successful desktop publishing—from the hardware required for basic to advanced typesetting and the software required for that very professional look. Two of the authors, Bove and Rhodes, were the editors and publishers of *Desktop Publishing* (now *Publish!*) magazine, and much of the book is based on their personal experiences using desktop publishing products to produce their own magazine. The third author, Wes Thomas, heads his own public relations company , and uses many of these same tools in his own business.

"Happiness is owning the means of production." So say the authors as they open their discussion of today's desktop publishing technology. In fact, that's the most exciting aspect about the technology —it's relatively inexpensive and easy to get into desktop publishing. You can put together a Macintosh based system, for example, using the Apple LaserWriter printer, and use it to develop complete publication quality materials. Although LaserWriter output may not be publication quality for books and "formal" periodicals (its resolution is 300 dots per inch), you can easily and quickly prepare and check your document on it and then move the file to very high quality phototypesetting equipment for final composition (typically at least 900 dots per inch resolution).

The key to all this is the power of PostScript (developed by Adobe Systems). PostScript is used in the LaserWriter printer (literally a computer in its own right, with a Motorola 68000 microprocessor and one megabyte of RAM). In addition, PostScript is used in the latest generation of professional phototypesetting equipment, and provides the compatibility required to permit personal layout/preparation on the LaserWriter, followed by migration to the professional composition level if required.

The book covers all of this in considerable detail, providing an excellent overview of the products available and their strengths and weaknesses based upon the authors' actual experience using them. The book segments the discussion into two major families of products: those for the Apple Macintosh family and those for the IBM PC family. Indeed, recently products have been developed which work on both systems (*PageMaker* by Aldus, for example), and these, too, are covered in detail. As you might suspect, the book itself was published using desktop publishing techniques. Electronic mail was used to prepare and review the text, as the authors are located on both the east and west coasts. The text itself was prepared using the JustText product designed to work with PostScript-compatible products. Once the text was in final form, the book was printed on an Allied Linotype Linotronic 100 typesetter. All of this was accomplished in a period of three months, proving to the initially skeptical editors at Bantam Books that desktop publishing technology could significantly reduce the time involved in book publication.

The authors include an excellent list of companies and their products along with an outstanding glossary of terms used in publishing and computing. Also included is a bibliography of other books and periodicals on the subject. If you're looking for an easy to read yet complete introduction to the "state of the art" in desktop publishing, this is the book for you. You'll find it very helpful in comparing the many product alternatives available as you decide how you might get yourself a desktop publishing system.

The High Cost Of High Tech: The Dark Side Of The Chip

By: *Lenny Siegel and John Markoff*
Published by: *Bessie/Harper & Row*
Price: *$16.50*
Reviewed by: *Jeff Spurrier*

In the heady days of the late seventies, it was fun spreading the gospel of micro-computing. High tech, like punk music and Japanese aesthetics, seemed to be the wave of the future. At last we were entering the post-industrial era, a time of fast, easy, cheap computer power for Everyman, with malice and harm for none. The miracle in the grain of sand was clean, democratic, and endlessly intriguing. Computer-based industries were the pot at the end of the rainbow, Santa Claus sliding down the chimney, and the never-ending free lunch all rolled into one.

It was a nice dream, but unfortunately it just didn't turn out that way. And if you want to hear how bad it really is, you should check out *The High Cost Of High Tech*. I guarantee you'll never feel quite the same way about your loving motherboard again.

The High Cost Of High Tech is an in-depth look at the not-so-clean world of high tech, from manufacturing realities to social, political, economic, and military implications, both at home and abroad.

The book begins at a military trade show in Las Vegas with an Air Force colonel effusing "Electronic warfare is more than a science. It's an art. More than that, it's . . . it's a religion."

As frightening as that mentality may be, it pales beside the description of 26-year-old refugee from Argentina who spent two years stuffing and soldering circuit boards out of her Silicon Valley home. She quit doing the piecework when her employer asked her to wash the boards in a chemical solvent on top of her stove. "Maria, unlike most Silicon Valley cottage workers, had studied chemistry before immigrating to the United States, and she knew that the hydrocarbon fumes could make her young son, crawling around on the kitchen floor, seriously ill."

Although occasionally Markoff and Siegel seem to overstate their case—trumpeting what seem to be worst-case scenarios—generally the book appears to be right on target. The authors create a web of extrapolation, industry statistics, and current political and economic policies that is tightly woven, unavoidably reasonable.

Even though it was released in 1985, *The High Cost Of High Tech* is particularly timely now when the furor over toxic wastes is reaching unprecedented proportions. And for the record—neither Markoff nor Siegel are jumping on a trendy bandwagon. Siegel is the director of the watchdog Pacific Studies Center while Markoff, formerly an editor at *Byte* and *InfoWorld*, is now a staff writer for the *San Francisco Examiner*.

It would be simplistic to see the book as merely a new-age Luddite manifesto. As the authors point out in the final pages "The high costs of high tech do not spring from the principles of solid state physics; they are the product of human behavior." The industrialized nations of the world are already in the midst of a microelectronic-led post-industrial revolution. *The High Cost Of High Tech* is one of the first efforts to stand back and see just where we are and where we're heading.

JOIN OUR GROWING LIST OF SATISFIED CUSTOMERS:

General Electric, Arthur Anderson & Co., Olin Chemical Co.,
Lolir Electronics, Goldenwest College

DEALER'S INTRODUCTORY SPECIAL

PRINTER CABLES - $4 ea (min. quantity 50)

The Barest Bare Bones of all!
XT COMPATIBLE
640K MAIN BOARD
640K MEMORY ON BOARD
150W POWER SUPPLY
SLIDE CASE
ASSEMBLED & TESTED
(FCC CLASS B CERTIFIED)
$259

DEALERS
ONLY
PLEASE

The Stripped Down AT
AT COMPATIBLE
6/8 MHZ UP TO 1 MB MAIN BOARD
512K MEMORY ON BOARD
200W POWER SUPPLY
AT CASE
AT KEYBOARD
ASSEMBLED & TESTED
$650
6/10 MHZ MAIN BOARD AVAILABLE
TURBO SYSTEMS ALSO AVAILABLE

QUALITY AND HONESTY — WE LIVE BY IT!

We import directly from the factory - no middleman
We carry complete product line for XT, AT, compatible
CALL for DEALER DIRECT PRICING

Atlantic Computer Products
13839 Bentley Place #A
Cerritos, CA 90701

Tel # (213) 404-7767
FAX # (213) 404-2608

NOW
READ and WRITE

1/2"
MAGNETIC TAPE

IBM-PC
OR COMPATIBLE
PC - XT - AT

FTS-1600

INDUSTRY STANDARD 9 TRACK TAPE DRIVE,1600 bpi RECORDING DENSITY , IBM PC COMPATIBLE CONTROLLER, CABLES, AND SOFTWARE DRIVERS ..

MS-DOS
XENIX

SYSTEMS PRICED
FROM $2,950.
OR RENT FROM $ 285. mo.

FTS- 6250

INDUSTRY STANDARD 9 TRACK TAPE DRIVE, 6250 bpi RECORDING DENSITY,IBM-PC COMPATIBLE CONTROLLER,CABLES, MS-D0S or XENIX SOFTWARE DRIVERS.

SYSTEMS FROM
$ 8,200

OR RENT FROM $ 820. MO.

1/2" TAPE
MICRO VAX II
DISK ADD ON UP TO 600 MEG
SERIAL I/0 FOR 1/2 TAPE
USED 1/2" TAPE DRIVES
HIGH SPEED LINEPRINTERS UP TO 1000 LPM.

714-768-8219

FINTEC SERVICES
15520 ROCKFIELD
UNIT #I
IRVINE CA. 92718

BUSINESS PRODUCTS

MEMORY RESIDENT PROGRAMS

Referee

Published by: *Persoft, Inc.*
For: *IBM PC/XT/AT or most compatibles , 128K minimum memory, one floppy disk drive or, 1 floppy and 1 hard disk - Not copy "protected"*
Price: *$69.95*
Reviewed by: *Ira Chandler*

Why did I run out of RAM memory? What can I do to make this memory resident program run without conflicting with this other resident program? Do I have to re-boot every time I run a different application with different resident program needs? How do I unload this "non-unloadable" resident program? Can I deactivate the first of seven resident programs I loaded, a keystroke accelerator, so it doesn't put *WordStar* into cursor run-on out-of-control-mode? What order are my resident programs loaded in, so I know which to unload first?

Two years ago, these questions were rarely asked. Today, they are serious concerns for the majority of PC users. Fortunately, *Referee* offers a simple solution.

Referee is a memory resident program that manages the use of other memory resident programs. A resident program can be deactivated from a simple menu, disabling the key sequence used to call it up. Even better, the effect of the deactivated resident program is cancelled. This is very useful with resident programs which are not called up, but perform some function while they are in memory.

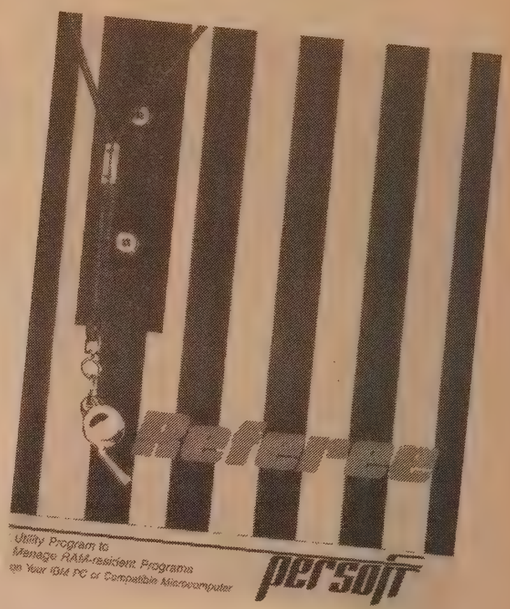
Referee consists of three main programs. *Refwatch*, which requires 25K, is usually called from the **autoexec.bat** file and monitors the resident programs you load after it. *Referee*, loaded from DOS and requiring 64K, is the callable program which displays, activates, deactivates, and unloads your resident programs. The third module, optionally loaded from the **autoexec.bat** file, is *Sideline*, a pop-up manager that performs all the *Referee* functions in a pop-up instant mode.

For the more experienced user, *Referee* has the unique ability to activate or deactivate a chosen set of resident programs according to your needs for the application. When you run your specific application, the designated resident utilities are automatically enabled and disabled. The setup of the file to keep track of these sets is very easy, and well explained in the manual.

I found an immediate use for this with a keyboard speedup routine called QUICKEYS. While most programs and DOS can handle a key repeat rate twice the normal speed, *WordStar* cannot. If I load QUICKEYS, which is unbelievable with the Norton Editor or other fast programs, *WordStar* gets a bad case of cursor run-on. Hit a cursor key, and the cursor flies forever across the screen. *Referee* allows me to deactivate QUICKEYS automatically when I load *WordStar*, which I use primarily for its CorrectStar spelling checker.

Installation is eased by the lack of idiotic copy "protection," a decision for which Persoft should be congratulated and its license agreement followed.

Though the whole program consists of only five files, only two of which must be loaded, no automated batch file loading programs are included. The otherwise excellent manual says that the publisher "assume[s] that you have a basic understanding of simple DOS commands like COPY and DIR." The documention recommends referring to



Referee manages RAM-resident programs to keep them from conflicting with each other.

Appendix A for "detailed instructions" on loading *Referee*, and does give the exact commands required for the COPY procedure. While this is adequate for the user who knows what a subdirectory is and how to use it and the path command, I always try to imagine the user as a totally computer-ignorant person who had a genius friend set up his hard disk. If that were the case here, the poor user would be calling in someone for help, and wasting time.

One feature I greatly appreciate is the **slkeydef** program that allows you to change the "hot" keys that call up *Sideline*. This prevents conflict with other resident programs.

Referee couldn't be easier to use. The commands are simple, as you do not ever type any names or words. The dangerous commands are arcane enough, with the **<Alt>** key, that you can't accidentally mess up.

Errors are easily avoided by the good design of the program. For instance, to unload a program, you have to unload that program and all of those that were loaded after it, because DOS needs continuous memory, not RAM with holes in it. I attempted to confuse *Referee* by loading, back to back, two programs that use similar hot keys. *SideKick* uses **<Ctrl><Alt>**, and *NicePrint* uses **<Ctrl><Alt><M>**. *Referee* had no trouble activating or deactivating either program, and both worked exactly as they should. My compliments to the authors.

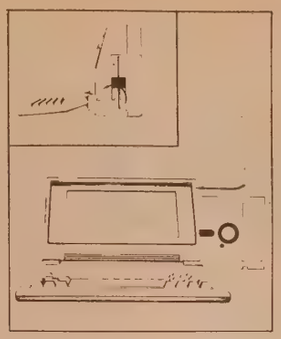
The beautifully laid out manual is staple bound, with about 60 clear, concise, well written pages. Especially pleasing is the whole graphic design of the package and manual, done in the classic referee colors of amber and black. Special notes are marked with an amber whistle for emphasis. The screens reproduced are clear, and it's easy to see the point being illustrated. A complete index, and even a postpaid card to submit documentation errors to Persoft, are included. I especially liked the Quick Start Card, detailing, for the experienced user, the few easy steps required to get the program running.

I encountered no compatibility problems, either with the programs themselves, or with their handling of off-the-shelf resident applications—or even some off-the-wall shareware resident programs. If I had not tested this program myself, I would not believe it could handle such a diverse group of resident RAM gobblers.

LAP TOP MORROW PIVOT

- 640K RAM
- 2-360K Floppy Drives
- Serial/Parallel/ Clock-Calendar
- Built-in 300 Baud Modem
- LCD Display
- 16 Line Display
- 24 Line View

ONLY **$795**



HI-SPEED HARD DISK DRIVES FOR IBM AT & XT

ATASI MODEL 3046

- 46 MB unformatted capacity
- Fully tested - 90 day warranty

Quantity Discount! Dealer Inquiries Welcome!

$465

EPROMS

27128-3	2.75	2764	2.50
2716	2.00	27256	4.00
2732	2.00		

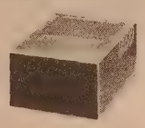
DRIVES

Hard Disk Upgrade for Tandy and Leading Edge PC's ..... *CALL

10 MB Drive Card $275

MPI Model 92S 96-TPI 55
Floppy Drive - single sided, dbl density, ½ height 39

While Supplies Last
10 MB HD 110.00



Floppy Drive
for Apple II, II+, and IIe

$79

APPLE

APPLE IIe Motherboard	*$175
APPLE IIe Keyboard	25
Floppy Drive for IIc	89
Power Supply	35

EAGLE IIe

EAGLE IIe Motherboard	*$75
Integrated Accounting Package	99

MISCELLANEOUS

Analog boards for Apple Drives	10
All boards for CMI hard disks available.	10 to 25/each

CLEARANCE! ONE OF A KIND!

IBM Portable	*$1695	FUJITSU MICRO 16S	700
KAYPRO 10	699	IBM AT	2395
COMPAQ Portable	1695	IBM XT	2195
COMPAQ 286	2200	IBM PC	1995

MOST OF THE ABOVE SYSTEMS ARE LOADED! CALL FOR DETAILS!

Above prices are subject to change without notice. Quantities based upon availability. All orders subject to acceptance by us. All authorized returned items must be prepaid. Refunds subject to a 10% restocking fee. Our liability is limited to the purchase price paid.

ANTHEM ENGINEERING

1420 S. VILLAGE WAY, SUITE H, SANTA ANA, CA 92705

(714) 543-5011

master charge VISA

Above prices are cash and carry
Credit cards, add 3% service charge.

QUALITY DISKETTES.....NO HIDDEN COST

5¼ DS/DD 35¢

For: LABELS, TYVEK SLEEVES & WRITE PROTECT. TAB. Add **4¢**

Min. 100
in Pack of 10/Box 100
THIS MONTH'S SPECIAL

IBM® AT 5¼ DS/HD $1.29 min 30

3½

- w/Lifetime Warranty
- 100% ERROR FREE

SS/DD $1.25
DS/DD $1.39

SAME DAY SHIPPING

COLOR DISKETTES

(12 Different Colors)

5¼ DS/DD 59¢ ea.

Prices Include: LABELS, SLEEVES, & WRITE PROTECT TAB
Colors: Red, White, Yellow, Blue (Light/Medium/Dark), Pink, Burgundy, Green, Brown, Beige, Orange, and Gray

MAXELL 5¼	DS/DD **11.90**
• for IBM AT Box of 10 (min 30)	DS/HD **22.95**
PRECISION 5¼	DS/DD **5.90**
• for IBM AT Box of 10 (min 50)	DS/HD **16.90**
DYSAN 5¼ Box of 10 (min 50)	DS/DD **18.70**
BULK 5¼ in White Box Box of 10 (min 100)	DS/DD **3.90**

(818) 906-1132

AMERICAL GROUP

MAGNETIC MEDIA DISTRIBUTOR

P.O. Accepted from Gov. Agencies & Schools

C.O.D. Pick Up or
Send your order with check to
AMERICAL GROUP
14200 Ventura Blvd., Ste. 201
Sherman Oaks, CA 91423

ADD $3.00 SHIPPING FOR FIRST 100 DISK & $1.00 EVERY 100 THEREAFTER
CALIF. RESID. ADD 6½% SALES TAX

More Solutions

LBP-8A1/8A2
Laser Beam Printers
- Prints 8 pages per minute
- 400 dots per inch resolution
- Diablo® 630 emulation
- Built in memory — LBP-8A1 (128 K), LBP-8A2 (1.125 MB)
- Four built-in fonts/can use up to 16 different fonts per page
- Compatible with most popular software packages
- LBP-8A2 allows full bit-map raster graphics/vector graphics mode
- Centronics or RS232C interface
suggested retail
$3000.00
(LBP-8A1)
A-60/A-65
- 18-pin print quality in three text modes
supports 9-pin speed
200 cps in draft, 100 cps in NLQ, 50 cps in NLQ+ mode
Emulates IBM or Epson printer
Pin feed/friction feed
- 14K buffer (A-60), 8K buffer (A-65)
- 80 column (A-60), 136 column (A-65)
Less than 60 dB
Centronics or RS232C
(optional) interface
suggested retail
$799.00
(A-65)
Canon

CALL:

Cypress Distributing Company®

560 Lincoln Ave.
San Jose, CA 95126
408-297-9800

80 Granada Ave.
Long Beach, CA 90803
213-434-4609

Distributors for: Brother • Canon • Dataproducts • Emerson • Panasonic • Sanyo • Sunol Systems • Toshiba • Quimax • Zigad • Prometheus

BUSINESS FORMS

LOCAL PLANT & WAREHOUSE

- STOCK CONTINUOUS FORMS
- CUSTOM CONTINUOUS FORMS
- SNAP OUT FORMS
- CONTINUOUS LETTERHEADS
- CONTINUOUS ENVELOPES
- LABELS - TAGS

PROFESSIONALLY DESIGNED FORMS AT COMPETITIVE PRICES FOR IMMEDIATE DELIVERY

CALL

714 **630-5661**

INFORMS

213 **802-1908**

3860 EAGLE DRIVE • ANAHEIM

For those who design applications for others, or run their machines from batch files, *Referee* can be controlled from the command line. All functions are available this way, and combined with the ability to automatically activate and deactivate resident programs via RAM Teams.

As we so often find, no toll-free support number is provided. This should have little effect in the real world, however, as the manual is excellent, and the program runs exactly as specified.

If you load two or more resident programs each day, get *Referee*! Even if you don't exactly know what you need it for now, it will become indispensable once you use it. (Persoft, Inc., 465 Science Drive, Madison, Wisconsin 53711, 608/273-6000 sales and support 8:30-5:00 CST.)

HARDWARE/PERIPHERALS

Universal Disk Controller

Manufactured by: *Central Point Software*
For: *Apple II Plus, IIe and Laser 128*
List Price: *$150.00*
Reviewed by: *Mike Markowitz*

Central Point Software has a problem promoting its new Universal Disk Controller (UDC) card for Apple II series computers and compatibles. Every Apple user already has a disk controller card, and they don't wear out, so the replacement market is zilch. Generic disk controllers sell for $39, and you can pick one up even cheaper at any computer swap meet. So who would pay $150 for a disk controller?

Anyone who needs a massive amount of storage, that's who. When you consider the growing size of application programs, the 140K single-sided 5¼ inch Apple Disk II represents barely enough memory to hold a grudge.

Apple itself has slowly started to promote the 3.5 inch disk as a new standard for the Apple II family, but the relatively high cost of Apple's own Unidisk (about $350) puts it beyond the reach of many users. No user is eager to juggle two different disk media. For a few more years, at least, Apple II software will mostly be available in 5¼ inch format, despite the superiority of the 3.5 inch disk in capacity, durability and compactness.

The UDC will support two 800K double-sided 3.5 inch drives. That's the equivalent of *eleven* old Disk II drives! That's 1.6 megabytes of storage. The card works with any combination of 5¼ inch, Apple Unidisk, or Macintosh-compatible 400K or 800K drives. Central Point offers a Chinon 800K drive for $195. This drive is noisy and lacks the reassuring little red light-emitting diode that tells you it's working, but it reads and writes *fast* compared with the 5¼ inch devices I am used to.

You can install the UDC in slots 1 through 7 of an Apple II Plus or IIe. Both DOS 3.3 and ProDOS are supported. The II Plus and un-enhanced IIe will not boot from a device plugged into the UDC, but the enhanced IIe and the Laser will, if the card is in slot 7.

The card is supplied with version 7.1 of *Copy II Plus*, which provides utilities for transferring non-protected programs and data files that used to require several disks onto a single 3.5 inch disk. I was unable to copy several copy protected programs onto the 3.5 inch disk from their original 5¼ inch media.

I was able to put all of *AppleWorks* on one 3.5 inch disk and start it up without any disk-swapping. This is a feeling of *power!*

The UDC is assembled in Hong Kong. It is a full-sized board, and all the components are wave-soldered except for an EPROM, which is socketed. The two cables provided with the board have metal-

hooded female DB-19 connectors. To use the controller with an old-style 5¼ inch drive you must cut the wire closest to the red stripe on the ribbon cable. This wire is one of four ground lines, and it isn't needed. Some users may find this intimidating, since it permanently damages an expensive cable.

The Universal Disk Controller is a good value for any Apple user with a need for the 3.5 inch disk. For the next few years, this will probably be a rather specialized minority. With a program selector like *MouseDesk* or *Catalyst*, however, the combination of the UDC and a low-priced 800K drive is almost a poor man's hard disk. (Central Point Software, 9700 SW Capitol Hwy. Suite 100, Portland, OR 97219 (503) 244-5782.)

TELECOMMUNICATIONS

InTouch

Published by: *Palantir Software*
For: *Macintosh*
Price: *$145.00*
Reviewed by: *Mark J. Veljkov, Ph.D.*

After two years, the Mac has finally come of age in the world of telecommunications. There are now at least eight telecommunications programs available, either commercially or in the public domain. So far the serious contenders are *Red Ryder x.x*, *MicroPhone* and *Smartcom II*, all of which are noteworthy for their macro capabilities. *InTouch*, from Palantir Software, contains many of the same features of these programs, along with some unique capabilities of its own.

InTouch will allow you to connect to any on-line BBS or commercial BBS service (GEnie, CompuServe, etc.). *InTouch* will also allow you to connect Mac-to-Mac and Mac-to-mainframe. *InTouch* can emulate a wide variety of terminals, including IBM 3101, ADDS Viewpoint/60, Beehive DM5A, Televideo 925, VT-100, VT-52, TTY.

While these are not so unusual, *InTouch* is unique in its support of the VIDTEX protocol. VIDTEX is the protocol that CompuServe uses for its graphics applications. This means that you can capture *non-Macintosh* graphics with your Mac. This is a very powerful feature, and once you try it, very addicting (and expensive).

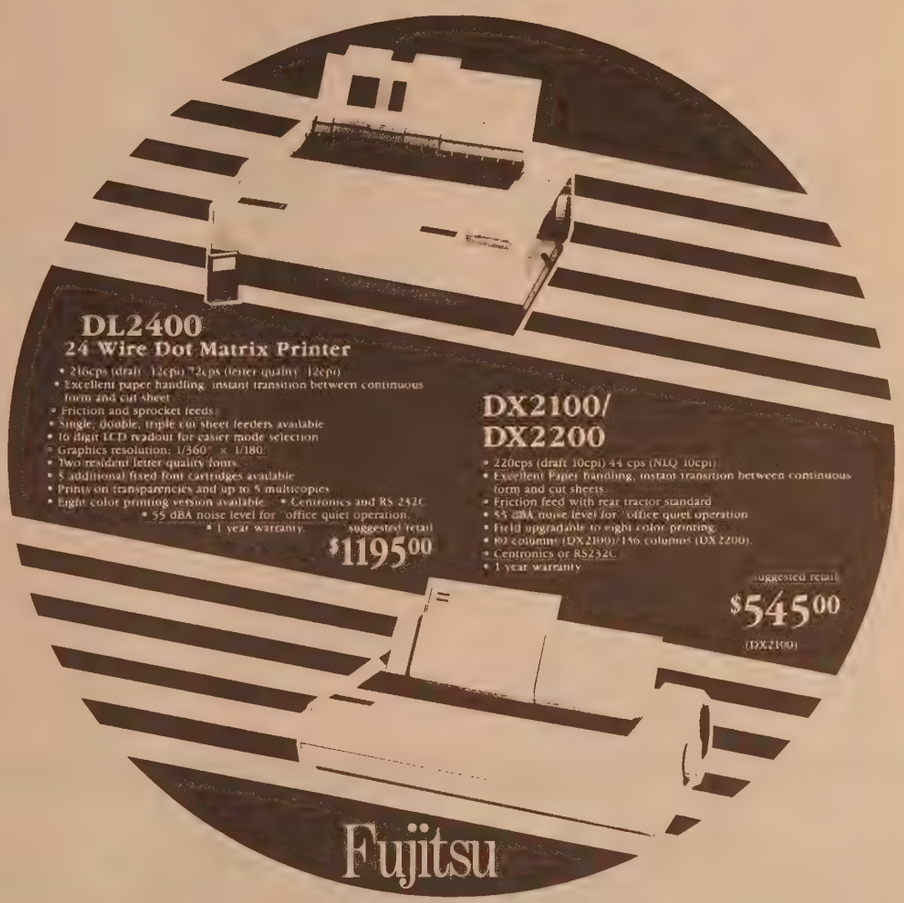
InTouch also includes the standard file transfer protocols including MacBinary and XMODEM; it also supports *Crosstalk*, making *InTouch* the only communications program that allows your Mac to talk to an IBM running *Crosstalk*.

Other features include on-screen function keys, user defined function keys, varied transmission speeds, autodial and auto logon, and the Communications Command Language (CCL).

CCL is the macro language of *InTouch*. CCL will allow you to customize and save your telecommunications settings. CCL is much like the procedural language in *Red Ryder*, *SmartComm II* and *MicroPhone*. However, from a beginner's standpoint, CCL is *InTouch*'s most difficult feature to use. Once mastered, it is very powerful. You can automate virtually everything you would ever want to while online. CCL does contain one very nice additional feature not found on some of the other programs that have a macro language—an "execute" function. Execute allows you to test out your macro before you actually run it, which can save you time and money. While CCL is more difficult to learn and use than the Watch Me feature found in *MicroPhone*, once you've learned it, your online time should be an easy and painless process.

The Auto Receive function is also a very handy feature. With Auto Receive, you can create a macro with CCL, and set your Mac up to automatically

Printing Solutions


DL2400
24 Wire Dot Matrix Printer
• 216cps (draft 12cpi) 72cps (letter quality 12cpi)
• Excellent paper handling, instant transition between continuous form and cut sheet
• Friction and sprocket feeds
• Single, double, triple cut sheet feeders available
• 16 digit LCD readout for easier mode selection
• Graphics resolution: 1/360" x 1/180"
• Two resident letter quality fonts
• 5 additional fixed font cartridges available
• Prints on transparencies and up to 5 multicopies
• Eight color printing version available
• Centronics and RS 232C
• 55 dBA noise level for "office quiet operation
• 1 year warranty
suggested retail
$1195.00
DX2100/
DX2200
• 220cps (draft 10cpi) 44 cps (NLQ 10cpi)
• Excellent Paper handling, instant transition between continuous form and cut sheets
• Friction feed with rear tractor standard
• 55 dBA noise level for "office quiet operation
• Field upgradable to eight color printing
• 80 columns (DX2100)/136 columns (DX2200)
• Centronics or RS232C
• 1 year warranty
suggested retail
$545.00
(DX2100)
Fujitsu

serving California and Nevada

CALL:

Cypress Distributing Company®
560 Lincoln Ave.
San Jose, CA 95126
408-297-9800

80 Granada Ave.
Long Beach, CA 90803
213-434-4609

Distributors for: Brother • Canon • Dataproducts • Emerson • Panasonic • Sanyo • Sunol Systems • Toshiba • Quimax • Zigad • Prometheus

There Are **18,492** Other Products Where These Came From All At The Lowest Price!

Call for a Catalog

AMERICAN COMPUTER AND OFFICE SUPPLIES
7810 Burnet Avenue
Van Nuys, CA
818-701-0446
800-638-7256

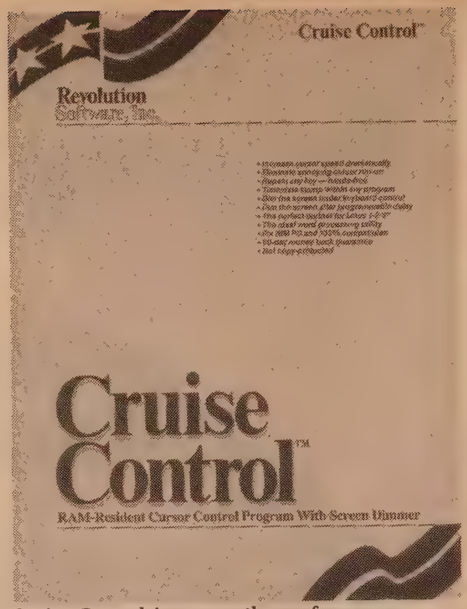
RIBBONS for OVER 2500 Printers as low as $1.25

DISKETTES 39¢ Complete

dial a specific number at a set time. Once online, your Mac will then log on to your service, go to the appropriate location, down- or upload whatever files you have specified (or get your electronic mail), and finally log off. All of this can be done at any previously specified time. You don't even have to be at home!

The manual is well written and clear. It could contain a better tutorial of the CCL. It relies too much upon the pre-set scripts on your disk; to obtain the full power of CCL takes some mastering. Other than this, the manual has a good index and is organized well.

To a certain extent, all telecommunications programs perform similar functions, and it's the particular features that distinguish them. *InTouch* will get you connected to your basic services, even while you are asleep. But where *InTouch* really shines is in the number of protocols available for you to use. VIDTEX is, and will be, very useful. Also, in this year of "networking," the capability to communicate with *Crosstalk* on the IBM could become a major selling point. (Palantir Software, 12777 Jones Rd., Ste. 100, Houston TX 77070, 800/368-3797.)



Cruise Control improves the performance of cursor keys on IBM keyboards.

UTILITIES

Cruise Control

Published by: *Revolution Software, Inc.*
For: *IBM PC/XT/AT or compatible; PC/MS-DOS 2.0 or higher.*
Price: *$29.95*
Reviewed by: *Jim Switzer*

How many times have you sat patiently at your keyboard holding down a key that you wanted repeated many times? Or released your cursor key at the "K" cell of your spreadsheet only to have it stop at the "X" cell? Well, these and other cursor movement problems are over. *Cruise Control*, from Revolution Software, puts you in control of your cursor once and for all.

Cruise Control is a RAM-Resident utility that offers you a lot of interesting features never before offered in a software product. For instance, an infinite repeat feature on any "repeatable" key, adjustable cursor speed control, elimination of the dreaded cursor "run on," a timed or manual screen dimmer, and the ability to add a date/time stamp within any program. All of this power uses less than 5K of your computer's memory.

Cruise Control is not copy-protected and comes with a very nice installation procedure. This procedure can be used to install the utility onto a hard disk or floppy and modify your AUTOEXEC.BAT file at the same time. To start the installation program, place the distribution disk into Drive A, type A:INSTALL, and press RETURN. The installation process will display a full screen with prompt areas for you to fill in with your settings for *Cruise Control*. After you have completed modifications of the settings, the program asks you whether you wish *Cruise Control* to be added to your AUTOEXEC.BAT file. If you reply yes, the program will read and display the contents of the file and allow you to place the *Cruise Control* execution statement at any point within this file. All this sounds and looks very impressive, until you restart your computer and find that the statement will not execute *Cruise Control* unless you have had the installation procedure place the program in the Root directory of your hard disk. If you haven't, you either have to move the CRUISE.COM file to the root directory and modify your AUTOEXEC.BAT file or modify your PATH statement to point to the directory that contains the program.

Once you've dealt with this, *Cruise Control* functions very well. It improves performance of all cursor-movement-intensive packages. It also tremendously enhances programs that support a mouse. An example of this would be the GEM series of programs from Digital Research. I don't happen to have a mouse, so movement of the pointer is a rather slow task. But with *Cruise Control*, the pointer zips across the screen almost as fast as it would if I had a mouse. *Cruise Control* improves mobility within spreadsheets, word processors, and database programs to an amazing

PC PORT CONTROLLER

©1986 CSI ALL RIGHTS RESERVED

Applications

- Inexpensive **local area network.**
- Printer buffering and sharing by multiple hosts.
- Host buffering and sharing for multiple printers.
- Local RS232C/RS422 data concentrator with programmable controller functions.
- Timed dial-up and message transfer with stand-alone modem.
- Point-of-Sale (POS) network systems.
- Electronic mail systems.

System Features

- Ten asynchronous RS232C/RS422 ports.
- 192K bytes of buffer memory.
- Resident **FORTH** or basic control language (Up to 7 screens of **FORTH** may be stored in changeable non-volatile memory) (BASIC-FALL '86).
- Host programmable port set-ups stored in non-volatile memory.
- Port reprogrammable transfer destination by embedded character protocol.
- Remote (modem) factory custom programmable.
- **Real-time** calendar clock for time and date stamping of messages.
- Any port to any port data concentrators.

COMPONENT SYSTEMS INC.

778-A Brannan Street
San Francisco, CA 94103
Telephone (415) 861-1345

CSI

GRAND OPENING - NEW LOCATION

COMPUTER PRODUCTS CLUB

1101 S. GRAND AVE. UNIT A & B
SANTA ANA, CA. 92705
(714) 547-9777

GRAND OPENING NEW LOCATION

SALES * RENTALS * SERVICE
IBM — COMPAQ — COMPATIBLE

FACTORY PRICES TO DEALERS AND DISTRIBUTORS

XT ENHANCED SYSTEM

640K on 4.77/8MHz Motherboard with Bios
150 Watt Switching Power Supply
Mono/Graphic/Printer Adaptor
Two (2) Floppy Drive w/Controller
Standard IBM Keyboard Compatible
Amber or Green Monitor
20 Meg Seagate w/Controller
Full One Year Warranty

$1149*

AT SYSTEM

512K on 6/8 MHz Motherboard with Bios
200 Watt Switching Power Supply
Mono/Graphic/Printer Adaptor
One (1) 1.2 Meg Floppy Drive
Fixed & Floppy Disk Controller Wa2
Standard IBM Keyboard Compatible
Amber or Green Monitor
20 Meg Seagate Hard Disk
Full One Year Warranty

$1449*

** ADD $30 FOR ASSEMBLY*

MOTHERBOARDS
w/Bios

Regular XT 640 K Board 4.77 MHz w/0K	$85
Turbo 4.77/8 MHz with 0K	95
Turbo 10 MHz w/0K	125
AT 6 8 MHz with 0K	450
AT 6, 10 MHz with 0K	470

EXPANSION CARDS

XT Floppy Cont. 4 Ports	$30
XT Multi I/O	70
AT Floppy Cont	60
AT I/O	65

INTERFACE CARDS

Mono Graphic Printer	$65
Color Graphic Printer	65
EGA Card	190

CASES

XT Slide	$30
AT Slide	65
XT/AT Slide	50

POWER SUPPLIES

150W	$50
200 W	80

FLOPPY DISK DRIVES

TEAC 360 KB	$85
TEAC 1.2 MB	125
FUJITSU 360 MB	80
Control Data 360 KB	70

KEY BOARDS

5160/XT	50
5152	65
5060 XT/AT	60
BTC 5339, 5161 AT	75

HARD DRIVES & CONTROLLERS

20 MB ST 225 w/WD Controller	$340
30 MB Seagate ST238 with Adaptec Controller	410
40 MB Seagate Half Height 40 MS ST 251	640
20 MB Seagate 4026 Full Height	465
30 MB Seagate 4038 Full Height	510
40 MB Seagate 4051 Full Height	635
20 MB Rodine 202E Full Height	310
30 MB Rodine 203E Full Height	410
40 MB Rodine 204E Full Height	535
20 MB ST225 w/DTC Kit	335
20 MB K-Drive w/Controller	325
20 MB Hard Card	375
20 MB ST225 Bare Drive	255
30 MB Miniscribes 6032 Full Height 28 MS	530
45 MB Miniscribes 6053 Full Height 28 MS	630
70 MB Miniscribes 6085 Full Height 28 MS	925

FULL 1 YEAR WARRANTY
90 DAYS ON FLOPPY & HARD DISK DRIVES

CASH - CASHIERS CHECK - MC/VISA (add 4%)
SORRY . . . NO PERSONAL CHECKS
ALL SYSTEMS FCC APPROVED CLASS B

COMPUTER PRODUCTS CLUB
1101 S. GRAND AVE., SUITE B, SANTA ANA, CA 92705
(714) 547-9777 (213) 623-8798 (818) 571-6956

degree. The date and time stamps are extremely useful in word processing programs that don't offer this option. *Cruise Control*'s screen dimmer is very nice if you happen to be like me and leave your computer running for extended periods of time unattended. The Auto screen dimmer will "blank out" your screen after a pre-designated period of time of no keyboard activity. The screen can be restored simply by pressing any key on the keyboard.

One drawback of having *Cruise Control* operating all the time appears with programs that disable the DOS keyboard buffer. Programs like *SmartCom II* use this feature, which basically puts *Cruise Control* out of business. The problem doesn't manifest itself unless you exceed the time limit on the Auto screen dimmer. If you are in the middle of telecommunications at the time this happens, your screen goes blank and there is no way of restoring it short of exiting *SmartCom*.

Cruise Control is very easy to use. The program is executed by typing CRUISE and pressing RETURN. This will load the program into memory with the standard default settings. If you need any help with the settings you can type CRUISE/H and press RETURN. This will display a list of the modifiable settings with a little explanation of each. Once the program has been loaded, the "HOT" key is the "5" key on the numeric keypad with NumLock off. To speed the cursor up, press the "5" and "+" keys on the numeric keypad at the same time. You will hear "clicks" that tell you that the program is speeding up the cursor. When the clicks stop, or you think that the cursor will be fast enough, release the two keys. If, in fact, the cursor moves too fast, you may slow it down by pressing the "5" and "−" keys simultaneously to slow the cursor down. Pressing the "5" and DEL keys will blank out the screen, with any other key restoring it to its original state. You may change "control strategies" by pressing the "5" and the Tab key.

The control strategies are either "A", "B", "C", or "D" when loading *Cruise Control* (the standard default is "A"). These are used for identification of the different groups of software that the program supports. You may find that strategy "A" works well with *Lotus 1-2-3*, but not with *Crosstalk XVI*. Looking up on the provided list of software/strategy combinations, you find that *Crosstalk* requires strategy "B". Rather than have to re-execute *Cruise Control*, you may change strategy by using the above procedure.

The current system date may be inserted in any program by pressing "5" and "D", and the time by pressing "5" and "T". *Cruise Control* can also repeat any key indefinitely by pressing and releasing the "5" key, followed by the key that is to be repeated. The repetition may be stopped at any time by pressing any other key on the keyboard. Every one of the program's features is easy to use and very helpful.

The documentation for *Cruise Control* consists of a 22-page booklet detailing the hows and whys of using the program. It also contains a very nice explanation of why the program was designed and the conflict within your computer that it resolves. Also included is a list of major software products and the Control Strategy that each requires.

Cruise Control is said to run on the IBM PC family of computers and compatibles. The program was tested on an IBM PC/XT with 640K. If you don't know whether it will run on your equipment, contact Revolution Software.

Revolution Software offers a 60-day, money-back guarantee on the purchase of *Cruise Control*. If you are not satisfied, simply return the program and documentation for a refund.

Cruise Control is one of those packages you'd probably overlook at first and not even try. Well, I'm here to say that it is definitely worth the $29.95 price tag. But don't take my word for it. Try it yourself. With a money-back guarantee, how can you go wrong?(Revolution Software, 715 Route 10 East, Randolph, NJ 07869, 216/366-4445.)

OTHER REVIEWS

Concurrent DOS

Version 5.0

Published by: *Digital Research*
For: *IBM PC/XT/AT, minimum 640K RAM*
Price: *$395*
Reviewed by: *Jonathan E. Martin*

This is what MS-DOS should have been in the first place. *Concurrent DOS* makes me feel like the IBM's turned into a *real* computer! This replacement for MS-DOS from Digital Research is well worth the price—just imagine being able to run (simultaneously!) three printers and a terminal off your PC without having to swap cables, reconfigure ports, or deal with other similarly loathsome tasks. *Concurrent DOS* also lets your computer work as a multi-user, multi-tasking machine with no further major investment in hardware, which is a great boon to the user.

If you have an EEMS board, such as the ones produced by Quadram and AST Research, four applications can be run at one time using *Concurrent DOS*. Of course, the machine is correspondingly slower, but it's great to be able to produce a graph from a *Lotus* spreadsheet while producing a report with *Word* and running two separate copies of *dBASE III* for reference data. Or how about running two separate copies of *Supercalc3*,

MACINTOSH X-MAS SPECIALS

800K of desk top publishing graphics for Mac Plus, or 512K with 800K external drive

(with orders of $75 or more)

FREE $29.95 Value

Save $$$$

GRAPHICS

	List	Sale
Alysts		
Fontastic	$49.95	$27
Fontagrapher	395.00	235
Ann Arbor Softworks		
Fullpaint	99.95	59
IDD		
MacDraft (1.2)	269.00	199
Manhattan Graphics		
Ready Set Go (3.0)	295.00	179
Mindscape		
Comic works	79.95	49
Graphics Works	79.95	49
Silicon Beach		
SuperPaint	99.95	59
Symmetry Software		
Picture Base	69.95	45

GAMES

Bullseye Software		
Ferrari Grand Prix	$59.95	$35
Fokker Triplane	59.95	35
Infinity Software		
Grand Slam Tennis	59.95	27
Spectrum Holobyte		
Gato	49.95	26

BUSINESS

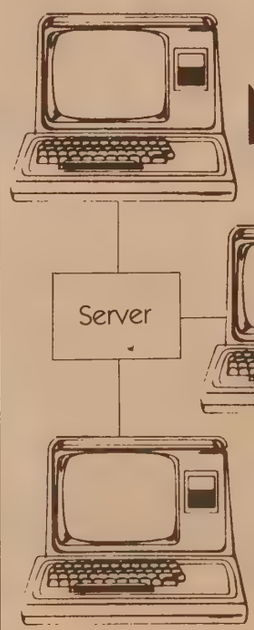
Affinity Microsys.		
Tempo	$99.95	$69
Cortland Computers		
Top Desk	59.95	38
Cricket Software		
Cricket Graph	195.00	129
Green, Johnson		
Spellswell	59.95	45
FWB Software		
Hard Disk util	89.95	57
Hard Disk Back-Up	54.95	39
Software Discoveries		
Record Holder	49.95	29
Silicon Beach		
World Builder	79.95	48
Symmetry Software		
Aota	59.95	37

(800) 628-2828 Ext. 506

ACTION SOFTWARE

69 Clementina St., San Francisco, CA 94105

Mastercard & Visa Only! Sorry no COD's. Add $2 per package shipping. CA residents add 6.5% sales tax.



NETWORKING — THE NEXT GENERATION

We can network your entire office for less than you would think. We will analyze your needs based on current hardware and software.

CALL US TODAY FOR A QUOTE

Business Accelerated Computers

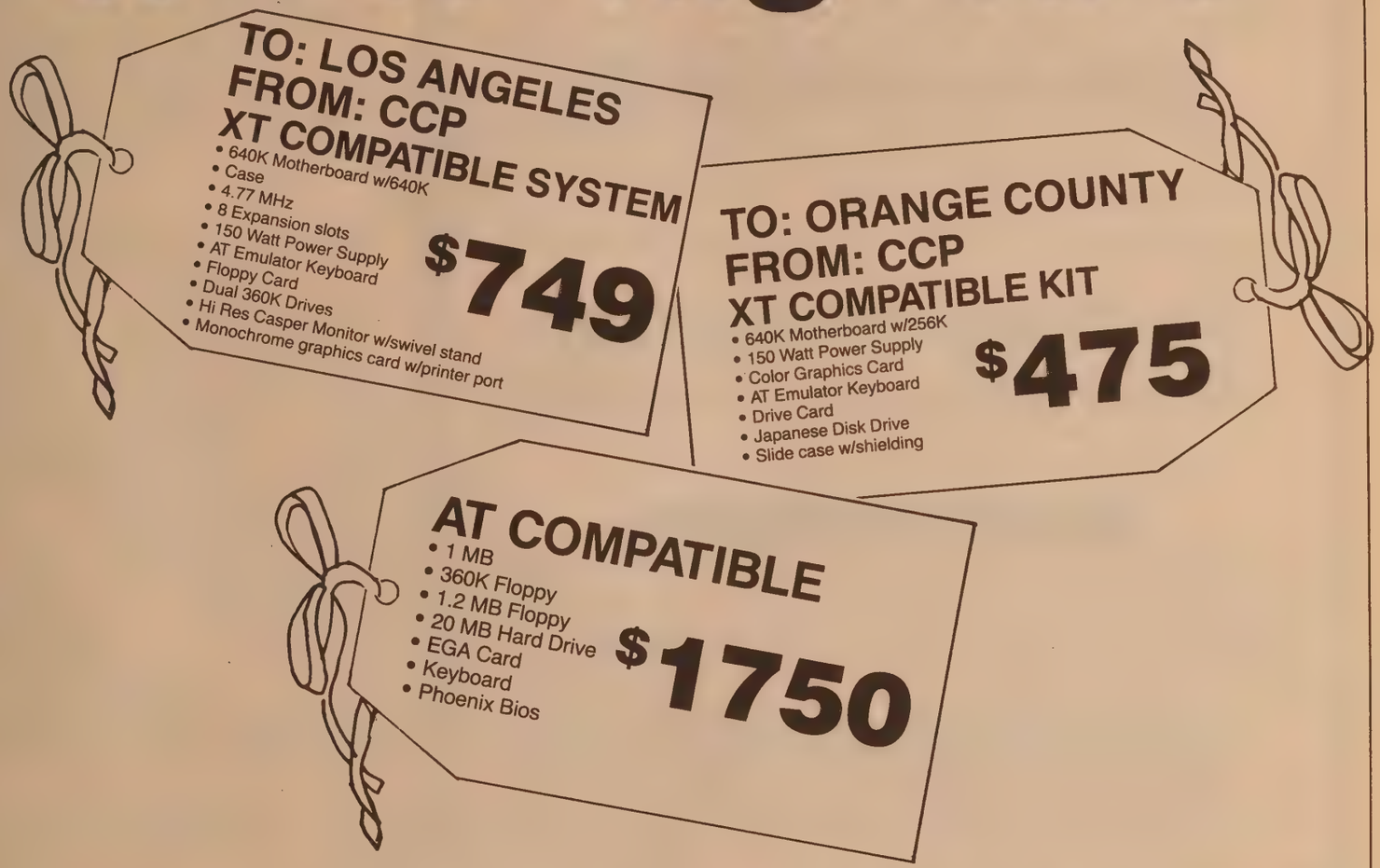
3868 Carson St., #330
Torrance, CA 90501

Company and corporate leasing available

(213) 373-3339
(213) 316-1144

computers and software

January
White Tag Sale



BOARDS AND CARDS

640K Motherboard 0K	105
Turbo Board 0K	135
Monographics card w/printer port	75
Color graphics card	62
Drive card	34
Serial card	28
Parallel card	22
Multifunction card (XT)	85
Multifunction (AT) +3 MB Cap	215
I/O Card	67
Case	39
150W Power Supply	65

COMPONENTS

2764	3.00
27128	2.50
27256	4.50
4164 (150ns)	9/10.00
41256 (150ns)	2.25
V20 (8 MHz)	10.95
8087 (5 MHz)	105.00
8087 (8 Mhz)	145.00
80287 (6 MHz)	159.00

20MB SEAGATE

Hard Drive w/Control Card	$385

MISCELLANEOUS

EGA Monitor	$455
EGA Card	$225
Casper Hi-Res Amber TTL Monitor	$89
MS DOS w/GW Basic	$75
Kurta Digitizer	$495
Modem 300/1200 Baud	$129
Parallel Cable	$10.95
OKI 182 Printer	$255
DS/DD Diskettes 5¼"	$9/box 10

CONCORD COMPUTER PRODUCTS

Terms: Visa, Mastercard, C.O.D.
Add $3 for shipping/handling

2910 'B' E. La Palma
Anaheim, CA 92806
(714) 632-6790
(800) 435-0907

WE'RE NOT SELLING SYSTEMS!

We're selling our abilities.
And we're selling our reputation as an integrator of first-quality XT and AT compatible systems.

When we configure a system for you, we use only the highest-quality, FCC-certified components; each system is individually tested and burned-in to assure that the system, as well as our reputation, remains intact.

When you buy a system from Pacific Micro, you're also buying our experience and our support.

Our emphasis on Quality and Support means that our prices may not always be the lowest on the market, but if you consider that you're getting much more than just a machine in a box, we think that you'll find our prices are very competitive.

XT TURBO MONOCHROME SYSTEMS

All of our XT Monochrome Systems contain the following: 640K Turbo System (4.77 & 8MHz, switchable), Maxiswitch Keyboard, Multi - I/O Board (Floppy Controller, Parallel Port, Serial Port, Clock-Calendar, Game Port), Monochrome/Graphics Board, and Samsung Amber Monitor.

Order your system with any combination of floppy and hard disk drives from the table below.

	No Hard Disk	10MB Hard Disk	20MB Hard Disk	30MB Hard Disk*
1 Floppy	$650.00	$1020.00	$1075.00	$1250.00
2 Floppies	$730.00	$1100.00	$1150.00	$1325.00

*30MB Systems use Rodime R0203E Full-Height, Voice-Coil Drives for ultra-fast hard disk access!
Add $300.00 to above prices for a color system with a Taxan 720 Color Monitor.

AT MONOCHROME SYSTEMS

All of our AT Monochrome Systems contain the following: 640K 8MHz AT Compatible System (with 200 watt power supply), Maxiswitch Keyboard, Combination Hard/Floppy Controller Board, Monochrome/Graphics Board, and Samsung Amber Monitor. Order your system with any combination of Floppy and Hard Disk Drives from the table below.

	No Hard Disk	20MB Hard Disk	30MB* Hard Disk	40MB* Hard Disk
1-360K	$1250.00	$1550.00	$1750.00	$1895.00
2-360K	$1325.00	$1640.00	$1825.00	$1975.00
1-1.2MB	$1295.00	$1600.00	$1800.00	$1950.00
1-1.2MB, 1-360K	$1375.00	$1675.00	$1875.00	$2025.00

(Add $300.00 to above prices for a color system with Taxan 720 Color Monitor).

*30MB & 40MB systems use Rodime Full-Height, Voice Coil Drive for ultra-fast disk access.

COMING SOON...PACIFIC MICRO'S EXCLUSIVE BABY AT

714-PM-TRY-US

Pacific Micro Data
PRODUCTS, INC.
23901 REMME RIDGE, EL TORO, CA 92630
(714) 768-7987

714-768-7987

SUBSCRIBE

Send me the next 12 issues for $9.95 In Mexico & Canada 25 Overseas (surface mail) 30

☐ Cash enclosed Send ☐ Bay Area
☐ Charge card ☐ L.A. Edition

Visa/Mastercard #_____
Expires _____ Signature _____
Card Address _____
Name (please print) _____
Company name _____
Address _____
City _____ State _____ Zip _____

Mail to:

MicroTimes Subscriptions
1800 N. Highland #220
Hollywood, CA 90028

or

5951 Canning Street
Oakland, CA 94609

each solving a different problem?

While the slower speed of the system is a drawback, *Concurrent DOS* provides considerable time savings in actual working situations. Imagine how much more quickly you'd work if you didn't have to exit an application to start another to get data for the first, then start up the first, and so on. In testing applications, I found that while the system was slower, my throughput was much faster.

Instead of forcing you to learn all of the DOS commands, *Concurrent DOS* has a program called "FILE MANAGER" which lists on a side bar all of the important commands, the files in the directory, and—a great feature—the amount of space remaining on the disk.

For beginners, or for those that do not use all the facilities all the time, there is a fantastic HELP facility. At any point the user can call up the HELP topics and learn command formats without having to dig out the manual. The user has the option of using the *Concurrent DOS* menu system, which is very well laid out, or the standard command line, as with MS-DOS. Users are able to set up their own menu system, thereby saving time and becoming more organized when using the menu structures.

Concurrent DOS also includes a good text editor that can handle most non-professional word processing needs, and a rolodex emulator called Cardfile. Cards can be updated, deleted, searched, and printed. Being from Digital Research, *Concurrent DOS* also runs CP/M-86.

Being able to run multiple programs is just a start. There are so many nice features in *Concurrent DOS* that just listing them would take up more space than is available. The names of the disks being accessed are flashed on the bottom of the screen—much better feedback than you'd get just looking for the disk lights on the machine. The screen updates are much faster than the slow scrolling of directories in standard MS-DOS. Also, when you're formatting a disk, *Concurrent DOS* keeps you continually informed of the progress of the process—more helpful than the standard MS-DOS "formatting" line. When you use the File Manager, the amount of space remaining on the disk is displayed in the upper left-hand corner.

Installation of *Concurrent DOS* is very easy. When you're booting from the master disk, the startup screen asks if the program is to be installed. After you tell the system which drive to install *Concurrent DOS* on, everything is automatic; the only interaction is a matter of changing the disk that files are being copied from. When booting from the hard drive thereafter, you'll be asked whether or not to load *Concurrent DOS*. If you say no, the system loads the standard (and now mundane) MS-DOS.

To give you an example of what can be done without any hardware other than the ports and a terminal: I have three printers hooked up to my system, a letter quality, a dot matrix, and an inkjet. Jaws dropped when I had a report being typed out on the daisywheel, a program listing on the dot matrix, and a graph of *Lotus* data for the report coming out on the inkjet—all this while displaying for reference a routine I wrote in C on a standard terminal while I wrote another program on the main IBM screen. Meanwhile yet another program was compiling in the background.

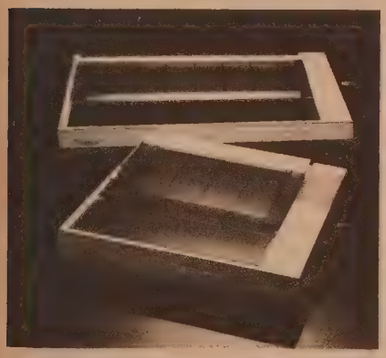
Concurrent DOS is very friendly for the first-time or casual user, and offers power MS-DOS can't even begin to touch. I had only one problem with the software—the first set of disks did not run. After a call to Digital Research, the new set of disks arrived two and a half weeks later; these disks worked well the first time out.

My recommendation? RUN, don't walk, to your nearest dealer and order a copy. (Digital Research, P.O. Box 579, Pacific Grove, CA 93950.)

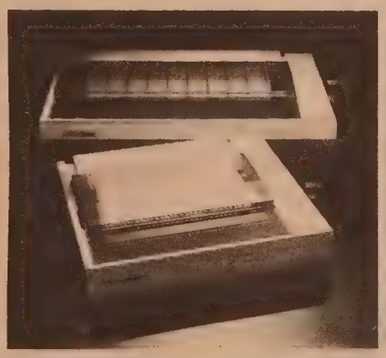
CELEBRATE THE NEW YEAR!

Receive FREE Printer Accessories with Every Citizen Printer

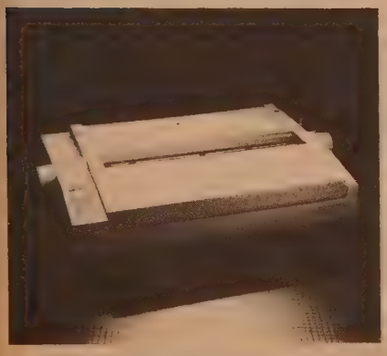
- Print wheel included with the Premiere 35 in place of the printer utility software.
- 6' Parallel printer cable
- 100 Sheets continuous form paper
- **Softstyle** Utility Software and Fonts: Menudriven software for the MSP 10, 15, 20, 25, or 120D which makes the printer especially easy to use. It's convenient to select print size and quality, do proportional printing, set form length or margins and many other features. Software includes 3 down loadable fonts (for MSP 20 and 25 only): Bold Roman, Orator and Old English.



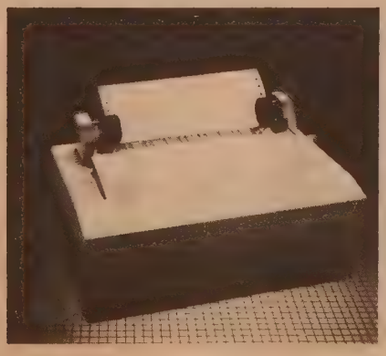
MSP-10/MSP-15
$449 $599
dot matrix



MSP-20/MSP-25
$499 $749
dot matrix



PREMIERE 35
$699
letter quality



120D
$269
dot matrix

This promotion is offered only through the following retail stores:

PC PLUS CORPORATION
7212 ORANGETHORPE AVE, STE 7A
BUENA PARK, CA 90621
818-571-6955 JOHN

COAST TECH COMPUTERS
18021 SKY PARK, STES A-B
IRVINE, CA 92714
714-250-9520 LOREN

C.R. COMPLETE BUSINESS SYSTEMS
18141 BEACH BLVD, STE 385
HUNTINGTON BEACH, CA 92648
714-841-5868 BOB

RS COMPUTER
18826 BROOKHURST STREET
FOUNTAIN VALLEY, CA 92708
714-963-3202 JIM

OMNI TECHNICS
3321 CERRITOS AVE
LOS ALAMITOS, CA 90720
213-594-4533 LARRY

FORTUNE MICRO SYSTEMS INC.
23461 RIDGE ROUTE, STE B
LAGUNA HILLS, CA 92653
714-583-1000 PAUL

INLAND COMPUTER CENTER
675 BREA CANYON ROAD
WALNUT, CA 91789
714-594-8096 STEVE

KEYSTROKES UNLIMITED
9375 ARCHIBALD AVE, STE 313
RANCHO CUCAMONGO, CA 91730
714-980-7663 CHUCK

ABCaDE
1617 EAST 17TH, STE 129
SANTA ANA, CA 92701
714-953-0699 NORM

COMPAC
COMPAC MICROELECTRONICS INC

ADVERTISER'S INDEX

Action Software 94
Advanced Logic Systems 42
Alinco 23
All Components. 58
Americal 89
American. 91
American Computer Products 107
American Digital Discount 51
American Micro-Line 59
AMP Business Machines Co. .57
Anthem Engineering 89
Astro Systems. 71
Atlantic Computer Products. . .87
AVS Adventure 101
BAC 94
BET. 19
C.E.S. 36
Cal. Computer. 54
Caltron 75
Clone Masters. 109
Club AT 20,21
Compac Micro Electronics. . . .97
Compucal 111
Compustart 47
Computer Applications 9
Computer Partners 49
Computer Safari Radio Show . .8
Computer Swap 58
Comtex 32
Concord Computer Products. .95
CSI 92
Cypress Distributing. 90,91
D-Data. 67
Data Bureau. 62,63
Data Dynamics 98
DHA 78
Digitech Research. 24
Eagle. 43
Eastern Ent. 83
Edwin Rutsch 70
Elco Computers 85
Fintec Services 88
Fortune Micro Services 35
Gates 15
Guenther Computer 61
House of Computers 37
IMC 68
Informs 90
Infotronics 70
Intelligent Solutions. 26
Intellisoft 2
JB Technologies 77
KJ Computer. 45
Magtron Technology 99
Micro 2000 25
Micro Computer Land 40,41
MICROBEST. 5
MicroCom Systems. 53
Microshows. 105
Mid-Cities Comp/Soft 39
Nakai (Z-Nix) 73
National Software Labs 12
Norrell Corp. 27
Pacific Micro Data Products . .96
Paramount Electronics 53
PC Solutions 55
PC Supply. 60
PC Tech. 115
Perfect Match 105
Peripheral Land. 24
Pink Panther 12
Precision Images. 52
Quimax 116
Ram Engineering 6
Recortec 50
Rent A Mac 6
Republic Business Systems .103
Rigid Merchandise 44
Rogers Products 22
Romanicus 81
Shore Solutions. 46
Silco 33
So What Software 28
Software 1. 105
Software Pipeline 36
Software World 29,30,31
Storage Data. 60
Sun Data. 7
Taiwan Computer 113
Tara Ent. 65
Tinma. 10,11
TTX Group 54
Turbokwik 3
Valley System 50
Wenger 39
Western Systems. 16,17
Win/Win Software 105
WPL International Trading Co. .93
Xenon 13
Subscription Promo. 96

Let us be your

ONE STOP CENTER

for computer supplies

We have a complete line of accessories
DUST COVERS • DISKETTE HOLDERS • AND MORE
PAPER • RIBBONS • DISKETTES • COMPUTERS
CALL FOR OUR FREE CATALOG

Attn: Dealers

Let us be your warehouse!
We stock over 200 different ribbons - 1 day turnaround

Ask about custom packaging, company logo imprinting, and other special services

Attn: Software developers

We offer diskette duplication and custom packaging!
call Ed at **(714) 494-8737** for details

THIS MONTH'S SPECIALS

Citizen MSP-10 Printer
160 CPS, 40 NLQ
$280 with FREE MODEM

Paper
20lb, 2600 sheets, clean perforation
$18/box

JVC DS/DD Diskettes
with sleeves and labels.
.50 ea.
Buy 100 Diskettes get a FREE DS-100L Diskette case ($9 value)

DATA DYNAMICS

2377-B Pacific Ave.,
Long Beach, CA 90806
(Call Collect!)
(213) 424-1172

VISA MasterCard

17301 Beach Blvd. #16A
Huntington Beach, CA 92647
In La Cuesta Center
(714) 841-9551

Shipping 5% of order (min. $2.50) plus $1.90 C.O.D.

FACTORY DIRECT

TO DISTRIBUTORS AND DEALERS

CASES

C600 XT Case - slideout 23
C600A AT Jr case 39
C700 AT case 79

KEYBOARDS

K139 AT/XT lge ret key 59
12 function, enhanced keyboard
K136 AT/XT AT style 47
hardware switchable
K135 AT/XT 58
separate num & cursor pads

POWER SUPPLY

P150W Switching power supply 45
P200W Switching power supply 82

MONITORS

Samsung Monochrome swivel base 79
Amber/Green MD1252G
Samsung Color CD1464W ..... CALL
Samsung color EGA ..... CALL

DRIVES

360K TEAC ½ disk drive 80
360K Fujistu ½ drive 75
1.2M High Capacity AT drive (Mitsubishi) 120
20MB Seagate hard disk 289
20MB Seagate hard disk w/Western Digital controller 385
30 MB Seagate hard disk 590

CABLES

8510 Computer to printer 6ft 3.50
10ft 5.50
15ft 6.50
8512 Computer to printer 6ft 8.50
Centronic M to M 10ft 9.50
8513 RS 232 Serial M/F 6ft 7
10ft 8
8514 RS 232 M/M 6ft 7
8515 Computer to Modem 6ft 4.50
10ft 5.50
8519 Computer to Modem 7
DB25M to DB9F 6ft
8524 Gender changer M to M 4
8525 Gender changer F to F 4

XT INTERFACE CARDS

XT Motherboard w/Bios 79
XT 640K Turbo board w/bio 89
384K Multifunction 67
Monochrome card 37
Monochrome graphic 49
Monochrome graphic printer 56
Color graphic 39
Color graphic printer 50
Floppy disk controller 1 port 22
Floppy disk controller 2 port 24
RS 232 card 1 port 19
RS 232 card 2 port 25
Game I/O card 13
640K RAM card 36
Printer card 13
6220 XT HD + FD controller 100
Clock card 17
I/O plus 42
Multi I/O 60
6210 XT HD drive controller 92
1200 internal modem 90
EGA card 150

AT INTERFACE CARDS

AT Motherhood w/Phoenix Bio 440
AT 1.2M Floppy disk card 63
AT 1.2M/360K controller 105
AT 2.5M RAM card 78
AT HDC/FDC controller w/cable 180
AT I/O card 53
AT/XT parallel serial 43

ACCESSORIES

Keyboard drawer (wood) 29
DX100 Diskette box 6.50
Bar code reader 295
256K RAM chip ..... CALL
64K RAM chip ..... CALL
Speaker 1
1200 BAUD external modem 95
4 way switch box serial 31
4 way switch box parallel 31
A/B switch serial 21
A/B switch parallel 21
UL surge protector 6.50
Power center 35
Portable computer 385

PRICES ARE FOR CASE QUANTITY ORDER

What A Deal!

We Specialize In Low Prices, Service, And Quality Support

MAGTRON TECHNOLOGY INC.

1017 B. Alosta Ave.
Glendora, CA 91740

For information & orders:
CA (818) 914-4783
CA (800) 237-1184
Outside CA (800) 323-3336

* IBM XT/AT are registered trademarks of International Business Machines.

USER GROUP NETWORK

By Mary Eisenhart

And a happy new year to you, too.

This month's mail brings more listings, announcements, and changes, along with a few Cries For Help. We'll start with those.

Bob Margulies of Manhattan Beach writes "I am a happy owner of a **Compaq Deskpro,** and would like to be put in touch with one or more user groups in order to get some information about the goings on inside my machine. The manufacturer has been amazingly reticent on the subject of hardware and software." Bob has obviously read this column before. He ends his letter with "No, I have no intention of starting a group myself."

And so, dear readers, if any of you know of any Southern California Compaq groups, Tell All Here, or drop Bob a line at 507 S. Aviation Blvd., Manhattan Beach, CA 90266. Meanwhile, Bob, you might want to call (415) 221-2764; this phone number belongs to one **D. Blow**, who can give you information about the **Compaq SIG** of the **San Francisco IBM PC Users Group**, which is at this point the only Compaq group I know about.

K. Stephan Larsen, all the way from Englewood, Colorado, isn't exactly looking for a user group, he's looking for information—but after all, one of you folks might know the answer, and I'm a shameless buck-passer, right? Anyway, says K. Stephan, "We are trying to locate a company (or its successor) called **Mirage Concepts**. They used to publish a word processor titled '**Express**,' and were based out of Fresno, we are told. If you or any of your readers can put us in touch with them we would surely appreciate it.

"Failing that, we are in need of a rudimentary word processor (IBM) that we may incorporate into an application we've developed. Again, if you or any of your readers..."

Any readers with info about the elusive Mirage Concepts and Express, or suggestions for alternatives, are encouraged to contact K. Stephan Larsen at Larsen Cotton Inc., 7445 East Peakview Ave., Englewood, CO 80111, (303) 220-9050.

Brian Smith of Redondo Beach is looking for people interested in the relational database **Paradox**. He's with the **Southern California Paradox Users Group**, aka LAPALS, and reports that meetings are being held in LA and Orange Counties. If you'd like to know more, send him an SASE at 350 Palos Verdes Blvd., Redondo Beach, CA 90277.

On the other hand, the stargazers among us might want to know about a valuable resource from the **Astronomical Society of the Pacific**. The Society has put together a new annotated listing of astronomical software that's currently available for home computers. The list includes 89 different commercial programs for Apple, Mac, IBM, Commodore, Atari, TRS-80 and Hewlett-Packard micros, among others. Each listing includes a brief description of the software, the computers for which it's available, the retail price and the full address of the manufacturer. The list also includes brief reviews of 13 introductory books and articles on astronomical computing.

You can get your very own copy of this 8-page book by sending a donation of $2 to the Society, along with your name and address (add $1 in US funds for postage if you're ordering from outside the US). The Society's address is A.S.P., Computer List Dept., 1290 24th Ave., San Francisco, CA 94122. Or if you'd like to know more, call Andrew Fraknoi at (415) 661-8660.

Lots of events this month. **The Silicon Valley Computer Society** will hold its January general meeting at 7:30 pm on January 28 at the Oak Room at Hewlett-Packard, 19447 Pruneridge, Cupertino, Building 48. This month's featured speaker is **George Morrow**, a veteran of the microcomputer industry and a man of strong and sometimes controversial views. He'll be speaking on the changing technology of personal computers and the impact of government restrictions on the free enterprise system from which the personal computer industry grew. If you'd like more information, call **Bert Stephens** at (408) 730-2240.

The **APL Bay Area Users' Group** will feature a talk by **Larry Breed** at its January meeting, says our faithful correspondent **Curtis Jones**. This talk, says Curtis, should be interesting to "anyone who's followed the development of APL. APL began as 'Iverson notation'—a means of writing algorithms clearly and concisely on paper. Larry came to Stanford in the mid-'60s and started writing interpreters that allowed computers to run the algorithms written in Iverson notation. Twenty years later Larry has some ideas about what was done right and what might have been done differently." The meeting will take place on the evening of January 19 at I.P. Sharp Associates, 220 California Ave. in Palo Alto. For more info call Curtis at (408)292-4060.

The **San Francisco Apple Core** will be hosting four seminars on Saturday, January 17, two for Apple II users and two for Macintosh. The Apple II sessions will be "Educational Programs for Children K to 3" at 10 am, with hands-on demos of approximately 20 children's programs, and "Assembly Language Programming on the Apple II" at 2 pm, led by **Leon Venter**, tech support for **Blythe Software**. Mac sessions are "Desk Accessories" at 10 am, and "Excel Developers Seminar" at 2 pm. The Apple sessions will be held at Winners Circle, 2618 Telegraph Ave., Berkeley; the Mac sessions will take place at Word Processing Services of San Francisco, 2354 Market (near Castro) in San Francisco. Cost is $10 per person for each session; children will be admitted free of charge and teachers at half price to the educational software seminar. For more information call (415) 771-5830.

Ruth Stever of **MacValley**, the Macintosh user group of the San Fernando Valley, informs us that the club's January meeting will feature a presentation from a representative of **Orange Micro**, showing its new pagemaking program **Ragtime**. The meeting is scheduled for Tuesday, January 20 at 7:30 pm in the cafeteria of Burbank High School, Burbank Blvd. at Third St. in Burbank. Call Ruth at (818) 848-1277 for info.

The Computer Interest Group of the **California Genealogical Society** will be meeting on January 10 at 11:30 am at the CGS Library, 300 Brannan St., 4th floor, San Francisco. **Hugh Barnett** from **Roots Unlimited** will demonstrate his computer genealogy system, handouts and information will be available and a roundtable discussion will follow the presentation. **Wayne Shepard**, who passes this information along to us, adds that the regular meeting will follow immediately after the presentation and recommends bringing your own lunch. For more information on this and other matters genealogical, give Wayne a call at (415) 989-5441.

Changes in group-land: **Merle Zmak** reports that the **Diablo Valley Apple Users** have moved to a new meeting location. You'll now find them at the Willow Creek Center at 1026 Mohr Lane in Concord, at 7 pm on the first and third Fridays of the month. If you'd like directions or just want to know more, give Merle a call at (415) 672-7596.

Don Henderson of the **Orange County Victor Group** has similar news—the group has thought better of its former policy of meeting on Saturday mornings and also moved to a new location. Meetings are now being held on the second Friday of the month at 7:30 pm at Cal State Long Beach, in Room 304 of Engineering Building #2 on Palo Verde Street. This is Cal State LB's computer lab, which, says Don, "now has over 40 Victor 9000 computers plus several IBM clones." Don invites calls at (714) 894-0073.

Paul Foraker sends us e-mail on The WELL to inform us that **MaCruzers**, the Macintosh group of Santa Cruz, also has a new meeting location—the Louden Nelson Recreation Center in Santa Cruz. Meetings are at 7 pm on the second Wednesday of the month. Paul adds that the club now has its BBS up and running. **Wood Ring**—(408) 423-7205—operates about 18 hours a day and offers several megabytes of public domain and shareware downloads, and Sysop Paul says he's making every effort to have the latest versions of important desk accessories and utilities available to callers.

Allen B. Ashley of Garden Grove writes in to tell us that the erstwhile **Xerox Users Group** has changed identities somewhat. Originally formed to support users of the Xerox 820 and 820II CP/M-based machines, the group found its members migrating to the DOS world without much of a supporting software library. "They have found ways to retrieve their pet CP/M files, and many have found that the old equipment is adequate for the jobs it was designed for," says Allen. "The new equipment gives greater flexibility and speed to their new ideas." The newly-christened **Pro*BUG (Professional Business Users Group)** meets on the first Saturday of the month at 9 am at Mercury Savings and Loan, 1095 Irvine Blvd., Tustin. It supports all PC/MS-DOS and CP/M machines and has its own BBS at (714) 543-3197, which runs 24 hours a day at 300 baud and supports XModem protocol. For more info, contact Allen at (714) 537-4608.

Speaking of BBSs, **Jim Switz** reports that his **01 MEBBS** board will be down for about a month while he moves. Watch these listings for the new number. **Robert Parks** would like you to know about his **Track 3 BBS**, which, he says, is an Apple board "modified to look like FIDO"; "it is aimed at anybody with an interest in things that travel along rails," from trains to roller coasters. Check it out at (415) 540-7570, 300/1200, 24 hours. **Bill Bennett** has moved the **Cat's Tail BBS** to a spiffy new Apple IIGS and re-christened it the **Cat's Tail Mega-System**. You can check out its impressive array of message boards and file transfers at (415)349-TAIL, 24 hours a day.

That's about it for now. Stay in touch—send Snail Mail to 5951 Canning St., Oakland, CA 94609, and e-mail to <microx> on The WELL (415) 332-6106. □

BULLETIN BOARDS

209

Region 7 TEC Center BBS. (209) 571-5085. Specializing in music and schools. 24 hrs, 300 baud. Sysop: Dan Guerra.

Inn Finity BBS. (209) 521-6240. Inn Finity is an Atari based BBS. Operates on a 130XE with 320K. Signalman 300/1200/2400 baud. 24 hours a day. ATASCII—ASCII. Sysops Buzz and Jann Kelley.

Bullseye BBS. Stockton, CA. (209) 474-3436. IBM and compatibles. 300/1200 baud. Open 24 hours, 8-N-1. Sysop: Golden Arrow.

The Spotlight BBS. (209) 368-5591. 300 baud, 24 hours, 8-N-1, dual drive Commodore 64 operated. Sysop: The Spot.

213

Gamenet Bulletin Board System. BBS is devoted 100% to gaming subjects. 24 hours, 20 boards, 10 D&D/RPG boards, Alkahest, professional book reviews. Unending Story, Adventurers' Training Ground, Game Hint, etc. Sysop: L.J. Phone: (213) 541-8039.

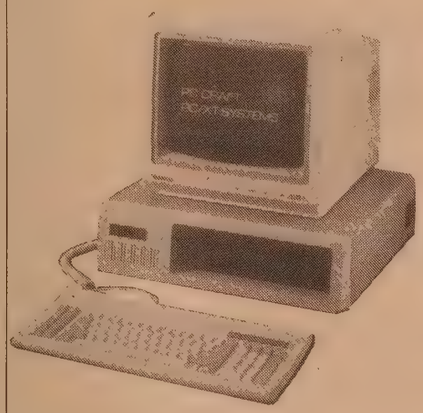
Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

Marina Matchup (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

Lynzie's Motherboard (818) 508-6482/(213) 654-0974. Pri-

YOUR ADVENTURE STARTS
WITH AN AVS SYSTEM!

BUY AN XT SYSTEM AND SAVE 30% ON ANY VIDEO CARD (card must be installed in system)



AVS PC/XT SYSTEM

- 640K On Board Memory
- Floppy Disk Controller
- 135 Watt Power Supply (ready for hard disk)
- 2 - 360K DS/DD Disk Drives
- High Quality Keyboard
- Color Graphics Adapter (optional)
- Color Monitor - Hi Res (optional)

NOW ONLY

$535

AVS AT SYSTEM

- 512K Motherboard (expands to 1 MB)
- 1.2 MB Floppy Drive
- 200 Watt Power Supply
- Floppy/Hard Drive Controller
- AT Type Case
- AT Type Keyboard

STARTING AT

$1355

PRINTERS
COPAL 120 cps dot matrix/letter quality (standard carriage) . . . . . **BETTER QUALITY**
COPAL 180 cps (wide carriage) . . **OUR BEST ONE!!**

MONITORS
SAMSUNG TTL . . . . . **ON SALE**
MITSUBISHI RGB . . . . . **ON SALE**
TVM RGB Color . . . . . **ON SALE**
SAMSUNG Composite . . . . . **ON SALE**

HARD DRIVES
20 MB . . . . . **$CALL**
30 MB . . . . . **$CALL**
40 MB . . . . . **$CALL**

MISCELLANEOUS
Multi function Card . . . . . **ON SALE**
Multi I/O Card . . . . . **ON SALE**
150 Watt Power Supply **$65**
200 Watt Power Supply . . . . . **$CALL**
Color Graphic Adapter **$85**
Monochrome graphic adapter (with printer port) **$115**
Genius Mouse **$95**
Joysticks . . . . . **$19.95 ea.**

MODEMS
Easy Data Modem (300/1200 Baud) . . . . . **SPECIAL PURCHASE - ASK**
Mitsuba Modem (300/1200 Baud) . . . . . **IN STOCK NOW - $CALL**
EPSON Ribbons for MX 70, 80, FX 80. . . . . **CLOSE OUT - $8.00 ea.**
Flip & File Diskette Holder (Holds 50 Diskettes) . . . . . **$12.00 ea.**

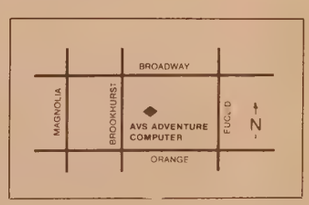
DISKETTES
MAXELL 10 per package
3M 20 per package
BEST PRICE IN TOWN!

WE WILL BEAT ANY ADVERTISED PRICE
DEALERS: CALL FOR QUANTITY PRICING

AVS
ADVENTURE COMPUTER

Business Computer Systems

512 S. Brookhurst #8
Anaheim, CA 92804



Open 7 Days a Week
-10 A.M. - 8 P.M.
OPEN SUNDAYS

ALL PRODUCTS GUARANTEED.
Cashiers Check - Money Order
C.O.D. - Shipped Immediately
Prices Subject to Change w/o Notice.
Some quantities may be limited.

714 533-8291

HAMILTON & McKEAN

BUSINESS SERVICES

714-544-0837
17772 IRVINE BLVD., SUITE 103
TUSTIN, CALIFORNIA 92680

WE PROVIDE THE TOOLS TO DO THE JOB

- INCOME TAX SERVICE BY CPA
- FINANCIAL PLANNING AND ACCOUNTING
- SEMINARS ON IMPACT OF NEW TAX LAWS ON SMALL BUSINESS
- OFFICE AUTOMATION COMPUTER SYSTEMS
- POS SYSTEMS
- ACCOUNTING
- TOTAL AUTOMATION
- BUSINESS MANAGEMENT AND CONSULTING

NCR
SHARP

& other fine products

CALL US TODAY ABOUT YOUR BUSINESS NEEDS *714-544-0837*

vate E-mail, 20 public message boards, upload/download programs. Public boards include Employment Opportunities, Restaurant and food reviews, Movie Reviews, Sci-Fi, Political and Current Event Debates, Dating, and more. 300/1200/2400 baud. 24 hours, operates on an IBM XT. Also BBS social events.

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

Videodrome BBS. Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

HUG1. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. (213) 874-8256.

The Wargames RBBS. Call for one of the best IBM RBBS around, running with the latest merge for RBBS-PC. Win free time weekly with secret password. Features include the latest PC news, special news reports, BBS listing, messages, e-mail, downloading/uploading, color/music online. Best of all, it's FREE! Operating 24 hours a day at 2400/1200 baud. NO 300 BAUD ALLOWED! Sysop: Jason Lin (213) 393-9777.

International Collectors Network. Coins, stamps, baseball cards, books, records, antiques and anything collectable can be bought, sold, or traded on the International Collectors Network BBS. Regional lists of collector events and shows in many categories. Also names and addresses of many collector organizations. Accessible using PC Pursuit. Data phone available 24 hours, 7 days at 300/450/1200/2400, 8, N,1. (213) 204-0646.

The Computer Consultant's Network, (213) 479-4074. Running a modified version of Martian! Software. 24 hours a day. This is not a job board, but merely a place for computer professionals to network and share information.

ARBBS (Average Remote Bulletin Board System) (213) 325-0213. 300/1200 baud, 8 bits, no parity, 2 stop bits, 24 hours. It includes hundreds of files for Polymorphic, text, Basic, TS1000, TS2068, Amiga, Texas Instruments 99/4A, Apple, CP/M, Commodore, Turbo, Atari. It includes a very extensive BBS phone list. Call now. Free. Sysop Tom Delellis.

Computer Conference Center. (213) 212-5267. TBBS w. Commodore, IBM, TI, Atari, Epson, Apple etc. sub-boards. Large DL with CP/M, MS-DOS and TR-DOS programs. Laurie Flood, sysop.

Hughes Aircraft Message Service. Uploads and downloads for Mac, IBM, Commodore, Atari, etc. Public message boards. (213) 549-9640. 300/1200, 24 hrs., 7 days.

Monolith-1.7 great public boards, private electronic mail, social events. (213) 659-JEDI. 24 hours, 1200/300. Sysop: Erik Goldman.

Mid-Cities Atari ST BBS. 300/1200, 8-0-1, 24 hours. (213) 867-1943. Sysop: Darin Ferraro.

PC Heaven. A multi-computer BBS that features downloads for many different PCs. E-mail, files for various machines, general to SIG message bases. No fees, no special application request forms. Just a fun BBS for everyone. (213) 374-7929. 300/1200, 7 pm-7am M-T, 24 hrs. F-S-S. Sysop: Tony Reeves.

The Mail Box. (213) 402-4079 Lakewood. 24 hours, 300 baud, standard parameters. Features: daily weather, computer news and events, entertainment. Free BBS, sign-on not necessary to read information. Public, for sale, and discussion. Now in our third year. Sysop: Roger Hummel.

Tele-Web. (213) 372-4050. 300/1200, 7 bits. Multi-user system, 24 hours. Present Gateway services: Greater South Bay IBM Users Group, Kayos Kaypro & CP/M Users Group, South Bay Tandy Color Computer Users Group. Mortgage Loan Weekly, Easy Reader newspaper, The Co-Op, Computer Bits News. Classifieds in over 80 categories, online restaurant menus, mortgage loan information, movie and book reviews, local business news, local entertainment calendars, humor and more. Information is updated daily/weekly depending on the gateway service. Sysop: David Silverberg.

T.U.S.D. (213) 533-4545, 10+ megs downloads, WWIV software, BBS list, several message bases and SIGs, mail, online help. Run on IBM AT, 24 hours for summer (5pm-7am during school). Free, 300/1200 baud. Sysop: Wayne Hoover.

Jukebox Bulletin Board (JBBS) (213) 670-8053. 8-N-1, 24 hours, 7 days, 300/1200 baud. Message board for buyers, sellers, and anyone interested in antique jukeboxes. Free. CP/M password available on request. No Fees. sysop: Ray Etchepare.

Secret Partner 1. (213) 543-5273. 8-N-1, 24 hour, 300/1200 baud. "Find your long-awaited sweetheart." Walter F. Howard, sysop.

Time-X-Change. (213) 329-3922. 8-N-1, 300/1200 baud, 24 hours. The West's only BBS dedicated entirely to the Timex-Sinclair user. Online games and information programs, full feature electronic mail and message system, public domain software. Free. Sysop: Dave Clifford.

Videoman RCP/M and Media Man Database. (213) 666-8588, 300/1200 baud. Hollywood's only remote computer for the show business and entertainment community. Free comprehensive databases, including hard-to-find products and services (US and Canada), television/motion picture production /post production services (worldwide), Los Angeles restaurant guide, remote access computers (world-wide), People In Entertainment and many more. CP/M, MS-DOS pd programs. 40 megabytes and growing. 7 days, 24 hours. Sysop: Norman H. Strassner.

Bloom County "Nochange" BBS. (213)615-0528, 8-N-1, 24 hours, 7 days, 300/1200 baud. Bloom County is an IBM BBS running Nochange software. This system features online games, file uploading/downloading and the best e-mail system around! Call and join our Quarton-The Later Years D&D message base. Sysop: Brody Schiess.

Find-A-Home. BBS emphasis on locating roommates, tenants, rentals, buyers and sellers for both residential and commercial properties. Also private mail and public forums including roommate discussions, dealing with landlords, foreclosures, real estate matters, investment opportunities, money matters, employment opportunities, current events, automotive, classified ads, humor, trivia. Operating on an XT clone with 20MB hard disk at 300/1200 baud. Online 24 hours. We're a new and free service. Call now! (213) 325-7269. Sysop: Ada Owen.

99 BBS. (213) 947-7777. 7 bits, even parity, full duplex, 300/1200 baud. Sysop: Roger Davis.

CompuCenter Long Beach. (213) 421-1041. 8-N-1, 24 hours, 300/1200. Multi-interest board in Long Beach with everything from Aviation sub-board to Mature Topics and IBM, C64/128, and Amiga. Sysop: Ken Cothern.

Digital Vision RBBS. (213) 732-6985, 1200 baud only, 8-N-1, 24 hours. Digital pictures and images for PC and Mac. Many graphic programs. Home of "Digipics"—you see on various BBSs around the country. Partial free/subscriber use. $12/yr for subscriber. Sysop: Dion Kraft.

Intelligent Solutions BBS. (213) 494-1243. IBM software and hardware tips. No registration, no rules, no restrictions to new users. Easy-to-use Fido system with 30 MB for up/download. Our user base consists of some of the most knowledgeable consultants and programmers in Southern California. 300/1200, 8-N-1, 24 hours. Sysop: Tom Mac.

The Lion's Den. (213) 402-7631. 5 pm-7 am, 7 days. 300/1200 baud. Commodore up/downloading, credit gambling game, 16 bulletin boards, mail service, color graphics, Xmodem and Punter support. Dial the Den today! Sysop: Robert Cross (The Lion).

The Talk Line. (213) 938-9697. 3 message bases: general board with discussions on current subjects or anything anyone wants to debate, a sports board and a music / movies board. 6 pm-7am. 300 baud, 1 stop, 8 WL, no parity, full duplex. Sysop: Frodo.

The Starship Sardonyx Net. (213) 467-6667. 8-N-1, 300/1200, 24 hours. We offer extensive general files, online games, up and download subs, 8 message bases, e-mail. Large public domain section for Commodore users. Sysop: Zed Yago.

LEGACY/The Law Network. Free exchange of messages and information on Computer Law, Entertainment Law, and Communications Law, and forum for new ideas and directions in the practice of law and administration of justice. Features include e-mail, online law journal, standard legal forms and agreements, and a pro bono conference for free legal advice to non-lawyers. Operating 24 hours at 1200 baud, 8-N-1. Accessible using GTE's PC Pursuit. Call (213) 553-1473. Sysop: Robert H. Kohn, Esq.

408

Atari Base BBS (408) 745-5308 or (408) 745-2642. 300/1200 baud, any time, any day. The official BBS of Atari Corp, for all Atari computers.

Byte Bandits ColossusNet. (408) 374-3974, 300/1200, 24 hours. Network USA. Sysop Sam C. Brown.

FREE USER GROUP/BBS LISTING

MicroTimes is a free computer magazine with a current monthly circulation of 140,000 copies per month in Northern and Southern California. We offer a free listing service to user groups, bulletin boards and computer associations. Let us hear from you. Use this coupon for your listing, and feel free to include additional information for our monthly user group column. Please send us your listing by the first of the month *preceding* the month in which you want your first listing to run.

We will run your listing as space permits until you tell us to stop, or until it's obviously obsolete. Please keep us posted on changes as they occur.

☐ **USER GROUP**

Group name_____

Meeting address_____

Meeting time and day_____

Contact name_____

Address_____

Phone number_____

☐ **BBS**

Name_____

Number_____

Parameters, operation hours, baud rate_____

_____

Sysop_____

USE SEPARATE SHEET FOR DESCRIPTION

Mail to: **MicroTimes User Group Listings**
5951 Canning St., Oakland, CA 94609

REPUBLIC BUSINESS SYSTEMS, INC.

SYSTEMS.SOFTWARE .SUPPLIES.
Your Computer 1-Stop

IBM PC/XT COMPATIBLES
COMPLETE SYSTEMS FROM **$595**
HARD DISK SYSTEMS FROM **$1095**
"AT" SYSTEMS FROM **$1795**

* 1 YEAR WARRANTY
* FULLY FCC APPROVED
* TOP NAME COMPONENTS
* CUSTOM CONFIGURATIONS

IBM is a trademark of International Business Machines, Inc

P.C. ADD-ONS

MODEMS - 1200 BAUD $99
(HAYES COMPATIBLE - INTERNAL)
14" COLOR MONITOR $295
(RGB / GREEN / AMBER)
20 MB HARD DISK $349
(WITH CONTROLLER AND CABLES)
20 MB HARD CARD $399
(PREFORMATTED - EASY TO INSTALL)
CITIZEN 120D PRINTER $189
(120CPS - EPSON GRAPHICS)
MONOCHROME GRAPHICS . $75
(HERCULES COMP. WITH PAR/PORT)
EGA CARD AND MONITOR..$695
(RUN EGA/CGA/MDA/HERCULES)

CALL FOR BEST PRICES ON
* EPSON * CITIZEN * AST * QUADRAM *
* TAXAN * PARADISE * SEAGATE *
* TOSHIBA * OKIDATA * TEAC *
*** AND MORE ***

WE ARE YOUR
CAD / CAM / CAE
SPECIALISTS

* AUTOCAD * VERSACAD
* MITSUBISHI * HITACHI
* ARTIST CARDS * H. P.
* CALCOMP * ROLAND
* HOUSTON INSTRUMENTS
* PLOTTERS * MONITORS
* DIGITIZERS * BNW CARDS

COMPLETE DESKTOP PUBLISHING
$ 395.00
USES A DOT MATRIX PRINTER
EASY TO USE
WYSIWYG ON MONOCHROME MONITOR
THIS AD WAS DESIGNED USING IT

(714) 979-7511
3413 W. MacArthur Blvd
Santa Ana, CA 92704

Evergreen PC Users Group (EPUG-1) (408) 270-4085, San Jose. 8-N-1, 1200/450/300 baud, 24 hours. Sysop Bob Allen. 32 megabytes online, 34 directories created by Special Interest Users.

Bizcomp BBS. Sunnyvale, CA (408) 720-9212, 300/1200, 24 hours. Message base specializing in modern technical help, with a special message conference for sysops. No file transfers available. No registration fee, but requires home & business phone numbers on first call.

Non-Smokers BBS. (408) 298-4277, 298-GASP, 8-N-1, RBBS PC, 24 hours per day, 300/1200 baud. Sysop: Ed O'Dwyer. Features non-smoking areas in restaurants and hotels, health info, diner's conference, messages, public domain software.

Home Board (408) 294-1454, no fee. A non-profit BBS focused on housing issues in Santa Clara County. 300 baud, 24 hours M-F (8 am Monday through 5 pm Friday). Sysop Ann Dannelly.

Board III (408) 985-7573. 300/1200 baud, 24 hrs., 8 bits, no parity. Board III is an ongoing experiment in telecommunications. Atari-based, but all computers welcome. Sysop: "The Chairman."

ADV in Lrn (408) 247-4769.

The CATS BBS (408) 356-8902. Computer Assisted Typography Service Typesetting BBS. Online tutorial of PC typesetting, public message bases, 300 baud only.

Sailors Refuge (408) 262-3963. F/8/N/1, 300/1200 baud, 24 hours. Over 30 different SIGs and boards. All computers welcome. Need Remote Sysops! C-128 powered. Fast! Stories, text files, quizzes. Xmodem/Punter file transfers. Not a kiddie BBS! 21 months online. 9.4 megs storage. Sysop: Ronnie L. Pierce.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

The Man O'War, (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

Silicon Valley Sysop's Exchange. Merlin's Castle BBS (300 baud only), (408) 578-1563. Sharks Head BBS (300/1200 baud), (408) 247-4810. The Man O'War (300/1200 baud), (408) 243-2370.

Northern California L5 BBS Morgan Hill, CA, (408) 778-3531, 300/1200 baud, 24 hours. Supports the L5 Society in promoting the development of space.

The Shark's Head BBS - Something for everyone, from serious to ridiculous. No-fee, membership system. We're not only user friendly, we're friendly users. Member SVSE. Dusty & Candy Van, (408) 247-4810.

Bay Area Atari Users Group 24 hour BBS, 300/1200, ATASCII or ASCII. Sysop Mark Bloemenkamp. (408) 249-7722.

NCR BBS of Northern California (408) 744-0556. Bulletin board for all users of NCR microcomputers (PC-4 and Decision Mate V). Learn more about NCR's microcomputers. Contact Lee Sherman or Jim Chandler, 756 San Aleso Ave., Sunnyvale, CA. (408) 743-4933.

Digikron Systems (ZNode 25). (408) 253-1309. ZRDOS/ZCPR3 Macintosh and Apple CP/M, 72 megabytes. 300/1200 baud, 8 bit, no parity. 24 hours/7 days. Sysop: Douglas Thom.

SOFTREK. (408) 438-6506. 8-N-1, 24 hours, 300.1200 baud. Sysop Mike Floyd.

Hotel California. (408) 942-1081. 24 hrs., 300 baud, Commodore oriented.

The Flying Fido. Fido network 143, node 23, is now up and running 24 hours per day, except during FidoMail. 300/1200 baud, (408) 946-3183. Special interest in aviation; ul/dl of pd software. Free.

Association of Apple 32 Users BBS. (408) 263-0299. 24 hrs., 300/1200. Sysop: John Griffith.

Sofia System. (408) 257-1853. (300 baud). 1-N-8. 7 lines real-time conferencing, 2 channels of 2-party chats, very efficient electronic mail, scrolling bulletin board, linked to stations across the USA. Membership: Level I (e-mail capability) $15/month; Level II (no e-mail) $10/month. (408) 257-1966 voice.

Matchmaker San Jose. (408) 249-4566, (408) 249-4567, 24 hrs., 7 days, 300/1200. Matchmaker San Jose is the ultimate matchmaking/dating system for personal computer users. Soon to support interstate matchmaking. Call now and see the future of personal communications. Type "dym" at login. Sysop: The Matchmaker.

Dragon Flight. (408) 353-3703, 24 hours, 300/1200 baud. "The Social System." Over 15 theme oriented message bases. Online quizzes. New remotes wanted! No fee. All ages and computer types welcomed! Sysop: Bronze Tooth.

Vietnam Vets-The LooneyBin. Nancy and Todd Looney, sysops. Dedicated to 'Nam vets, their wives, lovers, and friends. Good friendly conversation plus referrals and counseling. Online 23 hours 3/12/2400. (408) 293-7894. FidoNet #143/27.

Public Domain Software Special Interest Group BBS. San Jose, CA. (408) 270-4085, 8-N-1, 300/1200/2400, 24 hours. Features: 37 directories, 72 meg of files, open BBS with extended time registration and membership, PD-store, legal directory and over 10 public conferences. Join our legal directory for issues related to public domain only. Find the latest and most popular programs to date in our vast library of files. Sysops: Bob Plimley and John Lawrence.

The Snake Pit BBS. (408) 266-5895, 300/1200, full duplex, 8 bits, no parity, 1 stop, 24 hours. Commodore ul/dl.

Dynamic Resources BBS. (408) 972-9750 San Jose, 24 hrs, 7 days, 300/450/1200, no fee, registration required. Business and computer service oriented, but all are welcome. 20 megs of public domain software available for download. Computer supplies offered at low $$. Sysops:Terry and Sharon Woolsey.

WYRLD WYRM BBS. Role-playing games, computer games, and science fiction. Open access, everyone is welcome. FidoNet node 143/12. 9 am- 6 pm weekdays, 10:30 pm-6 am every night. 300/1200 baud. Robert Plamandon, sysop. (408) 263-8134.

Tele-Play. (408) 723-9003. 24 hrs, 300 baud, program matches parameters. Sysop: "Titan."

Consumers BBS and Insurance Center, Sunnyvale. (408) 732-4126, 300/1200 baud, 8-N-1, 24 hours. Rate your own home and auto insurance with one of the nations's top 5 insurance companies. Apply for a car loan with Lloyd's Bank. Get the Dealer's cost on new cars. See if your auto has been recalled. Buy or sell a car. Free, no passwords, no time limits. Sysop: Al Moskal.

The Portal System. (408) 725-0561, 8-N-1. New online communications system for the Bay Area. Conferences, e-mail, meetings (CB simulation). Technical forums, social conferences, advertisements. Fast response, easy to use, available 24 hours, no time limits. Over 65,000 postings, many from other networks covering 4 continents. Start your own conference too. Say you saw it in *MicroTimes*.

Phoenix Info. Sports betting, football, horse racing — Bay Meadows, Golden Gate Fields. Lotto and stocks coming later. Primarily Friday, Saturday, Sunday mornings/evenings while increasing days as the interest dictates. $10.00/wk subscription /donation requested to help defray expanses. (408) 270-2661, (408) 274-0816 (voice). Sysop: Jim Finnell.

The Wounded Land. (408) 736-6490. Active fantasy role playing games. 24 hours, 300 baud. Sysop: The Spirit.

Bay Area Bulletin Board. (408) 723-7238. 24 hours, world wide net mail, 66 megs of online programs for download, adult message area, several special interest areas. 8-N-1, 300/1200/2400 baud. Sysop: Jim Acker.

DYM #296. (408) 720-0724, 300 baud, 8-N-1. A BBS focused on personal e-mail and friendly exchanges of information. Features user match function and e-mail. five sub-boards including Public, Current Topics, User Activities, and two Adults Only sections. No fees required, but online registration/verification IS required. Sysop: Operator 161.

Tardis Information System. (408) 266-3555, 300 baud, Atari-oriented but all users welcome. Midnight to 9 am only. Tardis Systems is proud to present the debut of a pseudo-real time game simulation called "Night Movement." The plot is to protect the fictitious San Jose Army Base from terrorist attack. There is space for 200 players, and it starts January 1, 1987. Sysop: The Doctor.

Computer Tyme. (408) 732-2187. 300/1200, 24 hours weekends, 7 pm-9am weekdays. Sysop: Gary Araki.

Gino's. (408) 371-2703. 300/1200, Commodore UL and DL. Sysop: Porkchop.

The PET Sematary. (408) 263-3486. Commodore specific, X-Modem, Punter files, XSee. 300/1200 baud, 8-N-1, weekdays 5 pm-10 pm, weekends 10 am-10 pm. Sysop: Grave Robber.

Enable BBS. (408) 998-8927. 300/1200, 24 hours. We're here to provide support for your computer. IBM based, but all users welcome. Also featuring "Dear Enable," the alternative to suicide. Sysops: Rob Ehlers, Tim Duncan.

415

Kay*Fog RBBS. A system designed for novice callers. No fees, but registration required. PO Box 11135, San Francisco, CA 94101. Sysop: Bond Shands. (415) 285-2687, 300/1200 baud.

The Bay PBBS 300/1200 Baud full duplex. 24 hrs., 20 megs online. Apple super-32 computer section, excellent Macintosh/Apple II downloads. (415) 775-2384. Easiest to get through in the mornings.

TI BBS 300 baud, 24 hours. All systems welcome. Free. 4 message bases, large data base on various subjects. (415) 994-4877.

BAKUP (Bay Area Kaypro Users and Programmers) (415) 223-2237 RBBS & RCP/M. Must be a member of BAKUP, P.O. Box 20181, Oakland, CA 94620.

MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

Sports for the serious fan! Latest scores, transactions, injuries and updates, plus the complete betting line for all NFL games, as well as baseball, basketball, hockey, horse racing, and boxing news and results. For personal I.D. and access code and more information, send your name, address and phone number to California Sports Book, 3550 Cattail Court, Union City, CA 94587, or call C/S/B BBS at (415) 471-3591.

ROOTS BBS. Available 24 hours, 7 days a week, supports 300/1200 baud at 8/N/1. Specializes in genealogical info with messages, upload and download of CP/M, DOS, Apple software. Sysop: Brian Mavrogeorge. (415) 584-0697.

Welch Net II. A public FIDO BBS. Message areas devoted to Turbo Pascal programming and Seequa Chameleon computers. Available 23 hours/day. (415) 664-2811.

The General Store Public Domain Programs. Computer industry and computer product information. Hundreds of diverse public domain programs including science, music, education, games, financial, and business programs for the Apple computer. Easy to use. 300 baud, 9 am - 12 pm, (415) 851-4497.

Software First BBS 24 hrs., 300 baud. (415) 459-1544 Marin, (707) 579-1478 Sonoma. 23 message boards restaurant, sales, Amiga, ST, women's forum, reviews, sci-fi, general E-Mail, monthly specials on hardware, software, peripherals.

Bay Connextion BBS (415) 621-7561, 9pm - 9am. 300/1200 baud at 8/W/I. Macintosh Software, Classifieds, Personals, Sexual Freedom, and Star Trek. Claude Wynne, sysop.

Earth-Rite RBBS. We specialize in Earth Religion and related topics. We are not a software exchange. (415) 651-9496. 24 hrs., 300/1200 baud.

MacQueue BBS (415) 661-7374. 100% Macintosh BBS with 8 megs software for download, message base, and FidoNet Mail (Net 125 Node 2). Instant access, 24 hours, 300/1200/2400 baud. See you on the Q!

MacCircles BBS (415) 484-4412. 24 hours, 300/1200 bps, Mac/Lisa downloads, message base, E-Mail.

Spiritual World. Center for sharing spiritual development. 300/1200, 24 hrs, (415) 366-9033.

Super Resume. A free resume composition system for software engineering and MIS professionals. Produces a detailed, accomplishment - oriented resume. Also the latest weekly FidoNews and FidoList, plus two unique free-form, full-text data base systems available for downloads. No charge. 300/1200, 8, 1, N. 24 hrs. (415) 546-0119 modem, (415) 788-6000 voice.

Co-Ed & Associates. (415) 938-9470. 24 hours, 7 days, 300 / 1200 / 2400. CPM / CPM+ / MS-DOS / Morrow / Zenith / PC and clones. Sysop: Werner L. Gumpert.

Humor & Wisdom. A board dedicated to the exchange of comic relief and things to ponder in a new age of consciousness. Free, as all things should be. 300/1200 baud, (415) 937-2508.

Redwood Color Board. A BBS for the Color Computer user. 300 baud. 7/E/1, 24 hrs., 7 days. (415) 364-2658.

Open Campus BBS (415) 895-0135. Operated by San Leandro High School and Apple Eaters Users Group, 5 meg, 20 message bases plus library. 24 hours, 300/1200. Sysop: Bob Shayler.

Photobytes, a photography oriented BBS, features product information, help files, photo contest listings, plus much more. Sponsored by Wentling Camera Shops. 300 baud, (415) 439-2515, 24 hrs. 7 days.

The Castle BBS. (415) 355-8150, 24 hours. 300-500 baud, 8 bit, 1 stop, no parity. We have 4 message bases, e-mail and UL/DL. CBM oriented but all systems welcome.

Low Overhead BBS. User-friendly BBS, 24 hours, 7 days a week. IBM software, motorcycles and motorcyclists. (415) 763-6794 or (415) 835-9959.

Guideboard, Cabbie's Guide to San Francisco. Where to go for restaurants, doctors, auto repair, etc. The sysop gets his tips from driving a cab; the callers furnish the rest. The BBS also has an resident astrologer, Swami Tommy. The Swami gets his tips from the stars. Ask him any question. (415) 864-3858, 300/1200 baud.

Entrepreneurs BBS: Official BBS for Community Entrepreneurs Organization (CEO), and XT Compatible Club. 1200/300 baud. 24 hours, 20 megs., 8 bits, no parity. Entrepreneurial networking and information, brainstorming, and on-line support for IBM XT clones. Sysop Edwin Rutsch. (415) 552-9070.

APT Action BBS. C64 board dedicated to exploring on-line entertainment. Free ACTIONAUT software. 24 hours, 300 baud, (415) 322-3213.

RSVP BBS. (415) 659-9169, 300/1200, N-8-1. 24 hours. Sysop Jim Thomas. FAUG Amiga User Group discussion and file area, Dr. Who forum, Sanyo, IBM, CP/M files, CP/M forum, Ohlone College forum.

Marin Community BBS (415) 459-3326. 300/1200 baud, 6 pm - 10 am M-S, all day Sunday. 520 ST/Atari information. Sysop Dave Powers

MacCircles EBBS (415) 484-4412. 24 hours, 300/1200/2400. Running Red Ryder Host software on a Lisa 2/10 (Mac XL). Large software exchange, private mail system, public messaging.

Musician's Network BBS. Musician's information exchange. Space for want ads, bulletins, and public mail. Uploading and downloading available. BBS operates on Fido Software. 8 bits, no parity, 1 stop. Weekends only, 6pm Fri-6am Mon. (415) 893-1618. Sysop: Erik E. Hayles.

520 ST Atari BBS (415) 783-5545, 24 hours, 7 days a week. 300/1200, 8 data bits, 1 stop bit, no parity. Official Sixteen Bit Atari BBS of the San Leandro Computer Club, this system offers full support for all Atari ST system users. Currently running on a ten megabyte hard disk system, the system has many special interest areas including graphics, C, Pascal, LOGO, Basic, MIDI / music, communications and more. Supports four types of XModem/Modem7 and Kermit protocols. Call today! Sysop: Michael Curry.

AutoCAD RBBS (415) 547-5264. 24 hours, 7 days, 300/1200 baud, 40 megs online. Sysop Robert Schultz. Supporting AutoCAD, the world's most widely used PC based design/drafting software. There are 4 megs of AutoCAD drawings plus third party public domain programs that work with AutoCAD (i.e. menus, Autolisp and lisp macro libraries) available to download.

Insight BBS (415) 229-0551. 300/1200 baud, 24 hours, 7 days, 8-N-1. Now running PC-Board on an IBM clone with 20 megs on-line. The board now has 7 conferences and is looking for "message" oriented people who love to talk. There are no status levels, and everyone is invited! Carl Orsi, sysop.

The Precinct BBS (415) 797-2559. 24 hours, 300 baud, telecat II+. Variety of subboards, private e-mail and online gaming. Sysop: The Sorceress.

AIDS Information BBS (415) 626-1246. 24 hours, 300/1200 baud. Sysop Ben Gardiner. Free. All welcome. Statistics from Atlanta and San Francisco displayed, updated regularly as received. Sample Q & A about AIDS, based on clinic and phone exchange experience. Mail send/receive on AIDS; please not on other subjects due to limitation of one phone line. Please also no more than one hour per day. Mobilization Against AIDS information here. Calls to this BBS never disturb anyone.

Actrix Enthusiasts RBBS / RCP/M (415) 968-1783. 300/1200 baud, 24 hours, Free. Registration required. 46 megabyte CP/M system. In Mountain View. Sysop: Andy Bajka.

BBS-JC Just Computing. (415) 961-7250, 7E1/8N1. 24 hours/7 days, 300/1200/2400. Amiga and CBM public domain software. If it's new, see it here first! 8 sections including Commodore announcements are currently in operation. This board is especially for "Silicon Valley" Commodore users. Sysops: Thad Floryan and John Cronin.

Bug's Net HP. This bulletin board has over 20MB of PD software available. Message areas include HP300, IBM PC Technical and consultants forum. Fido node #10/777 (pending). 300/1200/2400 baud. 24 hours. (415) 236-1823. Sysop: John Buginas.

Professional Software Programmers Association. 830 Bay Avenue, Suite G, Dept. F, Capitola, CA 95010. A 24 hour service and support bulletin board for computer professionals. (408) 462-2829. 8 bit, no parity, 300/1200/2400 baud. No fees. Product reviews, professional job registry and consulting registry services. Ask for copy of the Association's free monthly newsletter and membership information packet.

A.M.U.L.E.T. II: Inform-Serve. (415) 989-5054, 24 hours, 7 days, 300/1200 baud. 95+ subboards, on-line gaming and many RPGs, 52 MB of on-line storage. Sysops: The Starmaster/Magician Merlin.

L'Expres! (415) 538-6340. Atari, 300 baud, 9pm-6am daily. Runs BBS: Express! software. Sysop: Greg Manubay.

The Dead Knight's Tavern. (415) 364-6877. Fantasy role-playing bulletin board system. 24 hours at 300 baud. NO FEE. System Overlord: Shane White a.k.a. Samuel Kline.

MicahLink. Free, 24 ours, 7 day private BBS for Mac users. Sponsored by Micah, Inc. Online support, discussions, directory of MicahDrive dealers. (415) 771-1119 modem, (415) 331-6422 voice.

The Pirate's Hollow BBS. 24 hours, 300 baud. Ye Cap'n: The Atari Pirate. (415) 593-6784.

Draco-Net Prime. (415) 474-8608, 300/1200. Official BBS for: A+ Magazine, International Apple Core, San Francisco Apple Core, Apple Three Users of Northern California, and Carrier.™ 24 hours, no fee. Leonard Reed and Jono Smith, Sysops.

Recovery BBS. (415) 621-5206. If you are in a 12 step recovery program, or think you have a problem with alcohol or drugs, or if you are compulsive about eating, smoking, or sex and love, call. Share your experience, strength and hope in message sections that include AA, NA, CA, OA, SA, SLAA and Alanon/CA. There are meeting listings in the file areas.

Cat's Tail Mega-System. (415) 349-TAIL (349-8245). All welcome. Nearly 100 public message forums, both computer- and non-computer-related subjects. Five on-line games, public domain file transfers for IBM, Apple, CP/M. Running on Apple IIGS. 300/1200, 24 hours.

Family Radio Forum. (415) 562-5483. 300/1200/2400, N-8-1, 24 hours. Download, upload, message, conference on parenting. For teens, singles and clones. Christian RBBS for everybody. Sysop: Richard Yim (voice 415/568-6200). Also (301) 261-1423 (Annapolis, MD), (712) 246-2115 (Shenandoah, IA), (916) 481-6320 (Sacramento, CA).

POPnet Berkeley. (415) 527-4910. 24 hours, 300/1200 baud. 15 lines of fun and games for all. Chat, CB channels, games with others. Mail and bulletin boards, of course. Not free, but cheap.

Vaudeville Local. (415) 337-8693. 24 hours, 8-N-1, 300/1200. Vaudeville Local is a BBS dedicated to vaudeville and circus arts. Sysop: Arthur Conway.

Crossroads BBS. (415) 968-9341. 300/1200 baud, 8 bits, no parity. 24 hour operation. File transfer for IBM/compatibles, Commodore 64. Message bases include space travel, singles, political dissent, sexual freedom, stories, poetry, musician's referral, programmer's corner, adventure gaming. No fee. Mike Macgirvin, sysop.

LaserWriter BBS. (415) 261-4813. 300/1200 baud, 24 hours. BBS dedicated to desktop publishing. Sysop answers all related questions. Located within Allen Computer Graphics, desktop publishing specialists. Files, messaging, user groups, e-mail. Upload direct for LaserWriter printout or to order other prod-

COME IN AND CHECK US OUT!

- ☑ FREE Consultation and analysis of your software and hardware needs.
- ☑ one-stop solution center
- ☑ convenient location—freeway close
- ☑ 3 years at present location
- ☑ service and support
- ☑ engineering background
- ☑ all major lines of software carried
- ☑ no "Box-Pushing"

Our Compatible System—Fully Assembled And Tested
As low as $499

Ask About Our Try-Before-You-Buy Policy On Software
Up To 60% Off Retail

JET flight simulator for IBM $36
Printshop for Apple $32

SOFTWARE 1 and computers

18162 E. Colima, Rowland Heights
60 Fwy, Fullerton Rd. ext. north ½ mile in Business Plaza
Open 7 days
(818) 964-1981

A complete negotiation skills course from the best selling book — "You Can Negotiate Anything" by Herb Cohen

FREE SOFTWARE

Negotiation skills are a necessary fundamental — everyone is a negotiator!

- Interactively learn and/or sharpen your negotiation skills through your PC
- Change your life for the better by giving yourself more control in every situation
- Learn approaches used by the masters
- Requires IBM PC or Compatible with 128K memory and (1) 360K disk drive
- Absolutely FREE!

Send $10.00 for shipping and handling
(Cash or money order ONLY)

Win/Win Software
PO Box 680458
Park City, Utah 84068
ATTN: FREE SOFTWARE
(801) 645-7260

WordPerfect

TRAINING AND CUSTOM SYSTEM CONFIGURATION

SSI APPROVED

PROGRAM TRAINING FOR YOUR SPECIFIC BUSINESS NEEDS
DRAMATICALLY REDUCES LEARNING TIME AND FRUSTRATION
INSTRUCTION PROVIDED ON YOUR COMPUTER IN YOUR OFFICE

PerfectMatch℠
COMPUTER CONSULTANTS

2049 CENTURY PARK EAST, 11TH FLOOR
CENTURY CITY, CA 90067
(213) 203-9979

SAN FERNANDO VALLEY
Computer Swap

The Computer Bargain Show

FEATURING:

- Over 150 Exhibitors
- Millions in Merchandise
- Bargain Prices
- Door Prizes
- Major Brand Names
- Latest Clones and Compatibles

FANTASTIC SAVINGS ON:

- Personal Computer Systems
- Disk Drives
- Printers
- Modems
- Monitors
- Personal Software
- Word Processing Software
- Game Software
- Computer Furniture
- Hard Disks
- Add-on Memory
- Print Wheels
- Cables
- Printer Ribbons
- Educational Software
- Business Software
- Joysticks
- Computer Books
- Plug-in Boards

Saturday, January 24

CSUN NORTH CAMPUS
formerly DEVONSHIRE DOWNS

(on Devonshire between Lindley & Zelzah)

10 AM to 5 PM
Admission: $5.00 Children under 12 free

A MICROSHOWS PRODUCTION
For Further Information Call 415-340-9113, in CA 800-433-7469

ucts offered by Allen Computer Graphics. Macintosh and other computers welcome. Sysop: Tom Allen.

The Players Club Network. (415) 771-2051. 7-E-1, 300 baud, M-F 24 hours. Devoted entirely to the performing arts. Job info, news, monologues, games, quotes, and more. Operated by Committee for National Theatre Week.

The Records Department. (415) 426-0470. User registration required. Public domain and shareware programs available for download at 300/1200/2400 baud. Caters to IBM; also Apple, Commodore, Atari. Large, friendly discussion section with something for everybody; games, voting booth, technical help. Bill McCauley, sysop.

SFCAL RCP/M. For Adam users. Berkeley, CA. 300/1200 baud, (415) 549-3378. Sysop: Robert Baker.

Silicon Valley Computer Society BBS. (415) 968-6891, 300/1200, 24 hours. Sysop: Herb Shear.

Computer Adventure Center, C.A.C. 24 hours daily, 300-2400 baud, in Fremont. No fees, IBM based but open to all callers. New BBS#: (415) 490-7365. Sysop: Al Demar.

Breakthrough Software BBS. Support for TimeLine users. (415) 892-0408, 300/1200/2400 baud, 8-N-1. XMODEM or Kermit protocols. 7 days, 24 hours.

EBMUG BBS. Running 24 hours a day, 300/1200, 8-N-1 at (415) 848-2609. Private mail system, public messages, Macintosh software.

KAY+FUN RCP/M. (415) 572-8219. MS-DOS, CP/M, modems, business applications (e.g. *dBASE, Lotus, Reflex,* Wordproc). General discussion of commercial and public domain software. Also public domain and private file transfers and more. FREE online registration. 300/1200/2400. Sysop: Ernest Hintz. Sponsored by KAYFUN users group.

Programmer's Circle. (415) 239-1722. 8-N-1, 300/1200, weekdays 3 pm-11pm. The Programmer's Circle specializes in carrying source code and tools to aid the programmer. Special attention is given to the Macintosh and Apple II computers, but all computer users are welcomed. Data files are online for the Mac and Apple II computers. Sysop: Roger Gibby.

The Live Wire. (415) 540-0529. 300/1200, 24 hours. A digital magazine for the graphic-arts community (printers, typesetters, self-publishers, artists). Free. Sysop: Rick Hepting.

Tax Havens—Offshore BBS. Tax planning for the 80s, 90s, and beyond. Complete current information on LEGAL income tax avoidance and asset protection for the ordinary American individual or business entity. Also information on avoiding probate, death taxes, inheritance taxes, capital gains taxes. Supreme Court rulings and current legal opinion are included. (415)843-6853, Berkeley, CA, 8-N-1, 24 hours, 300 baud. Sysop: Ardy Leenders.

MEBBS BBS/RCPM. Member of the FOG and PRACSA networks. Supporting CP/M and MS-DOS public domain software and a public-access message system. No fees, novices welcome. Online registration for FOG, PICONET and PRACSA members. 24 hours, 300/1200/2400 baud. Sysops: Jim Switz and Lowell Streiker. (415) 692-1406 (Burlingame).

POPnet San Ramon. (415) 830-1191. POPnet San Ramon is 7 lines of fun and games for all, and growing. Chat, CB channels, games with others. Mail and bulletin boards, of course. Not free, but cheap. 24 hours, 300/1200. (415) 830-1190 voice.

The Far Side. (415) 471-1138. 300 baud, Tele-Cat II+, 24 hours.

Machiavelli Interface. (415) 659-1168. 8-N-1, 24 hours, 7 days, 300/1200. IBM and compatible PC board with Net-Mail feature. 30+ megs of downloads, conferences. Sysop: Dewayne Mikkelson.

Cold Moon On A Single Star. (415) 668-6101, San Francisco. 24 hours, Fido board. Chinese culture, history, language, Chinese cooking, discussion, etc. Asian community events. Sysops: Joseph Puig and Susan Chen.

Dr. Don's TBBS. (415) 885-1973, San Francisco. 300/1200, 24 hours. CarTalk and SportsTalk discussion and special interest boards. Private e-mail. All automobile sportscar enthusiasts, sports fans, softball-baseball-football players are invited to call. Sysop: Dr. Don. Co-sysop: Bimmer Pilot.

Centerville RBBS. (415) 793-3037. 300/1200/2400 baud, E-7-1 or N-8-1, 24 hours daily. Sysop: Joe Halbleib.

The Board. (415) 652-8277. 1200/2400 baud, 8-N-1, 24 hours. Public and private conferences, technical support. For AT&T and compatibles; AT&T PC support conferences. Associated with Bay Area AT&T PC6300 Users' Group. Sysop: Troy Blackburn.

Attitude Adjustment. (415) 939-1639. 8/N/1, 24 hours, 7 days, 300 baud. Call today and get your Attitude adjusted. . .just for fun. If you have an Attitude and want to tell people about it, you know where to call. Small but growing system: 8 message bases, private e-mail, voting, textfiles and a few downloads. Emphasis is on interaction between Adjusters on the message bases. Sysop: Rick Adjuster.

Dial-Your-Match #341 in Hayward. (415) 489-2572. 24 hours, 7 days, 300/1200 baud, no charge. Sysop: The Matchmaker.

Yet Another BBS. (415) 689-8952. 8-N-1, 300/1200, 24 hours, 7 days. Upload/download, entire public domain library of "The Ulternate Source." All makes of software, message base, e-mail. Friendly sysops! Jim and Alex Stewart.

Track 3 BBS. (415) 540-7570, 300/1200 baud, 24 hours, Berkeley. for railfans, roller coaster enthusiasts, transit issues, and the like. Sysop: Robert Parks.

Infolinc RBBS. (415) 672-9270. 8-N-1, 300/1200/2400 baud, over 500 files online, conferences, doors, online chat with other users. Special private line for supporting users, running PC Board 11/6/E, 24 hrs. Sysop: John Palmer.

619

Ramona BBS. (619) 789-6235. 24 hours, 300/1200 baud, C128, C64, Amiga, Atari, IBM, CP/M. P.O. Box 373, Ramona, CA 92065. Sysop: Digiteer.

Sysware BBS. 24 hours, 300/1200 baud, (619) 278-8661. Commodore machines only. Sysop: Don Malette.

The Nassau XPress. (619) 433-XPRS. 8-N-1, 300 baud, 24 hours. An information and entertainment BBS with 11 message bases including electronics, amateur radio, computer news, music, adventure games, BBS review. Full access is granted to long distance callers with same day validation for new users. UL/DL available using XModem or Punter. Private e-mail, text files, online games and utilities. Sysop: Dan Wright.

707

Napa Valley RBBS / RCP / M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

Survival Communication Forum. Fido 125/7. Focusing on preparedness and self-sufficiency. Multiple message and file areas. A MedNet member system featuring weekly CDC reports, medical text and news files. Open to all. 23 hours daily, 300/1200 (707) 545-0746. Don C. Kulha, Sysop.

R.A.G. (Redwood Atari Group) BBS. 300/1200, 24 hrs. (707) 539-8889. Sysop: Bill Marlin.

STATE BBS ST and 8 bit Atari. Supports all Atari computers. On line surveys, public domain software, discussion and a built in adventure game (if you can find it). 300/1200 baud, 24 hours a day, full duplex. Sysop: Mikkel Lawrence. (707) 585-2194.

Softy's BBS. (707) 437-4334. 24 hours, 8N1, full, 300/1200. An Apple BBS with a technical theme. We have boards for IBM as well. Retail store advertising with discounts for users of this BBS. John Hagen, sysop.

UNIBLAB BBS. (707) 422-1669, 8-N-1, 24 hrs. 300/1200 baud. Community-oriented BBS. On-line games, SIGs, XMODEM protocol, no fee. Sysop: Ben Harris.

Sigma BBS. (707) 274-8561. Call this BBS for the best IBM-PC/compatible RBBS in the Redwood Empire. Over 650 downloadable programs. We feature "Doors" software for your adventure playing moods and Tradewars II, a multiplayer galactic challenge. Tradewars can support up to 70 players and features sector movements and planet creation. We also support the latest in RBBS-PC Bulletin Board Software, Procomm communication with utilities software and many other programs. 24 hours, 300/1200/2400, 8-n-1. 72 minutes allowed daily. Sysop: Randy Sun.

714

The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Computer Consultant's Network problems, solutions for business,legal and engineering problems. Referral service. (714) 982-5994 intro file.

Environet. (714) 731-6439, 300/1200, no parity, 8 bits, 1 stop bit. David Salahi, sysop. The online source of information and contacts for the environmental community. To log on, use user id 105, password PARKS.

El Toro RBBS/RCPM. (714) 855-0672. 24 hrs. 7 days/week. 300 / 1200 / 2400 baud. No charge, open access, no registration. Specialize in ZCPR3 and CP/M PD utilities. Sections for AMPRO, SB180, dBase II, TPascal, Modula-2, Wordstar, ZCPR3, modems, SIGM and utilities. Over 3000 programs in 88 megabytes online. Public E-mail system. Easy to use ROS system. The collection point for Modula-2 in So. Calif.

The Pit Stop. (714) 854-4448. 300/1200, 8 data, 1 stop, no parity, 24 hours excluding mail time. Cruise by The Pit Stop, Orange County's premiere entertainment board with everything from a general babbling area to areas for automotive information, movie and restaurant reviews, music information, KROQ arguments, FidoNet mail, three adults-only sections (natch), file areas for IBM and Macintosh, and a whopping 5 MB of disk storage (this will change). Seeya there!

K-WEST. (714) 646-3060. 8-N-1, CP/M and DOS. 24 hours, 300/1200/2400. Sysop: Peggy Lloyd.

The Byte Zone BBS. 7/E/1, 7 days a week, 24 hours a day, 300/1200 baud. System serves all Tandy computers as well as others. Features private and public message bases, uploading and downloading, a joke section, as well as a software exchange section where users can trade programs with one another. No fee required, but to gain full access you must register online. Sysop: Franco Collino. (714) 971-2543.

Easy On of Moreno Valley. (714) 924-4324. Offering 65 meg of public domain (5000 files) for IBM and CP/M operating systems—Kaypro 10 networked. 2nd biggest library in California, with a local network in Newport Beach and across continental USA. BBS offering private one-on-one tutoring to endusers. Leave msg. for sysop if not available—we return your message and try to assist you. 24 hrs, 7 days, 300/1200/2400. Sysop: Al Cobb.

CMC Computer Systems. (714) 835-0910. Information boards: Apple II, Apple III, Laser 128, IBM, Buy/Sell, hard disks. 300/1200 baud, 24 hours. Sysop: Charles F. McConathy.

Amiga-Line. (714) 772-4097. 24 hours, 300/1200 baud. 100% Amiga for Orange County. Sections for graphics, sound, BASIC, ROM kernel, C, Hardware and Games. Sysop: Tom Jacobsen.

Diamond Bar BBS. (714) 861-7268. 8-0-1, full duplex. 24 hours, 365 days. Sysop: Albert E. Ray, Ph.D.

The WOCCUG Board. Operated by West Orange County Commodore User Group. EBBS, 8-N-1, 24 hrs, 300/1200. (714) 772-4182. Sysop: Mark Stanford.

The Buckeye BBS. (714) 821-0589. C64, Punter, Xmodem, 300/1200 baud, 24 hours. Sysop: Art Collins.

FBBS. (714) 823-3673. 24 hrs., 300/1200 baud, full duplex. 50 megabyte system based in Fontana. Downloads for Commodore, Amiga, IBM, Atari, Apple, CP/M. 17 active message bases, weekly online magazine. Sysop: Larry Krzewinski.

The Dracula's Castle. (714) 964-0413. No parity, 8 data, 1 stop, 10:30 pm-6 am, 300 baud. Sysop: Dracula.

GameNet. (714) 520-4263, 24 hours, 300 baud, multiuser board. This Orange County based system features interactive games, a chat area, and an online mail section. Sysop: Merlin or Patches.

Bits and Pieces Times BPT-#. (714) 630-5619. 300/1200, No parity, full duplex. 9 pm-9 am. Sysop: John Callaci; sub Mike Dalton.

Software Exchange. (714) 552-3515. 300/1200/2400, 24 hours, 7 days, 8-N-1. Specializing in public domain and shareware for IBM and compatibles. Over 2000 programs in 42 megabytes on line. Features include private and public message bases, conferences and online help and menu screens. No charge, but you must register. Sysop: John Coon.

C-TUG BBS. (714) 458-1288. Punter protocol, 24 hours, 300/1200 baud. Sysop: Les Gertz.

77-Amiga. (714) 77-AMIGA. 300/1200 baud, 24 hours, 40 meg. drive. Sysop: Al Cheser.

717

The Dead Board (717) 677-9573, 24 hrs., 8 bit word, 1 stop bit, no parity, 300/1200 baud. Grateful Dead tape trading and info; space for bulletins, ads and public mail.

805

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

KERNCOM. (805) 322-8800. 300/1200/2400 baud, 24 hours, 7 days. KERNCOM has operated continuously since March 1983 for the IBM community. KERNCOM is owned by the Kern Independent PC Users Group and is never off line except for routine maintenance. Sysops: Rick Heming and Jim Harrer.

CCCUG BBS. Central Coast Commodore Users Group. (805) 934-2216. 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads. Sysop: Greg Johnson.

PC Vision. (805) 487-3149. 300/1200, 8-N-1, 40 megs. PC-, MS-DOS programs. Sysop: Frank Driscoll.

Tech-Talk. (805) 922-5488. 300/2400 baud, 24 hrs. 21 meg pd software on a 63 meg system. Online registration, instant access to all files, MS/PC-DOS, CP/M. Sysop: Jerry D. Russell. Public access "Collie ver. 1.2."

CompuLink Fido. (805) 494-3350, 300/1200/2400 baud, 24 ours except during netmail. Huge selection of ham radio files; other features include echomail, Outside, and role-playing games (StarTrek, Gamma World, Champions, AD&D, more!!). 20 megs—call today! Sysop: Eric Daymo.

Mustang WILDCAT! BBS. (805) 399-1887. Bakersfield, CA 300/1200/2400/9600 baud. 24 hours, 7 days. This board serves as the development home for the WILDCAT! Bulletin Board System written for the IBM PC. Free access to over 40 megs of download files on your first call. The message section supports conferences in Turbo Pascal, PC Utilities, WILDCAT! updates, electronic stock reports, and many others. Sysop: Jim Harrer.

Affection Connection. (805) 527-7464. 24 hrs., 7 days, 300/1200 baud. Multi-user BBS offering live on-line chatting, matchmaking. Sysop: Devin Woods.

818

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Oracle BBS (818) 980-6743, system password MICROTIMES, is a multi-interest, multi-user BBS running 6 phone lines on a CompuPro. Features include 8K messages, comments on messages, match-maker, adult material section, online CHAT between users and much more. 24 hr., 300/1200 baud.

The Agency BBS. 300 baud. Free. All systems welcome. 16 message bases, large data base of over 100 files on various subjects. Special areas for special interests such as gaming, business programs, and MIDI (Musical Instrument Digital Interface). 24 hours. (818) 794-5001.

BAMM-RBBS Tarzana. The ultimate IBM BBS in the nation. Hundreds of files available for downloading, the greatest message base, conferences, software charts, Top Ten Charts, video charts, concert information, E-mail, music news, current news, discussions, the greatest users ever, and MUCH, MUCH more. Also play exclusive Lottery Ticket giveaway. 7 days. Sysop: Derek Vincent. No fee required. (818) 345-4485.

The Audiophile Network. A databoard system for the music lover and audiophile. Information, specifications, prices and the latest news about hi-end stereo components. 24 hours, 7 days, unless down for repair. (818) 988-0452. (818) 782-1676 (voice) for info.

Speak Easy BBS. 300/1200 baud, runs on an IBM-AT with 26 megabytes. UL/DL with Xmodem, games, 20 message bases, dating service (questionnaire), voting booth. All computers invited! (818) 905-6262.

Ski Center West. 300 baud, full duplex. 50 ski resorts in western states. Bulletin board, E-mail, buy & sell equipment, merchant section, more. (818) 982-2530. Information (voice) (818) 982-3571.

Warren Communications Network. TI BBS, 24 hours, 300/1200 baud, graphics, speech, downloads. Sysop Douglas Davis. (818) 361-9294.

The Hotline Operated by Video Take-Out; callers worldwide. Online orders, The Newsletter, Newsbytes, Hits (records, tapes, CDs, European music). The system is free, easy to use, 24 hours, 7 days, 300/1200/2400. 8-N-1. (818) 766-6442.

Party & News Line. Chat with other live users by modem! Read the latest computer news provided by BBS Press. Use your modem and call (818) 842-3322 now! 300 baud.

Lynzie's Motherboard (818) 508-6482/(213) 654-0974. Private E-mail, 20 public message boards, upload/download programs. Public boards include Employment Opportunities, Restaurant and food reviews, Movie Reviews, Sci-Fi, Political and Current Event Debates, Dating, and more. 300/1200/2400 baud. 24 hours, operates on an IBM XT. Also BBS social events.

Commodore 128 Dial-Your-Match BBS (818) 842-6900. 300/1200. The ORIGINAL Match-maker. Sysop: Gregg E. Collins.

Light Artists, LTD. (818) 985-0541. 24 hrs, 300/1200/2400 baud. Sysops: Marty and Gerald Lehtola.

The Mogur's EMS. (818) 366-1238. Private and public e-mail, 20 special interest group message sections, 8 database sections, 27 megabytes, upload/download with xmodem, open to all systems, operating systems and users. Numerous unique and innovative features using custom software. In operation since 5/1/81. Multiuser with two lines, 2400/1200/300 baud, 8-1-N. Sysop: Tom Tcimpidis.

The Dugout. (818) 248-0562. Operates at 300 baud on a TI-99/4A but welcomes all systems. Includes message base, computer events, on-line adventure, xmodem d/l, and more. 6pm-11pm daily. Sysop: Jim Edwards.

The Talk Channel. (818) 506-0620. 24 hours, 300/1200. Sysop: Gary Clarkson. A multi-user, multi-interest system featuring chat on-line with other users. 20 public message boards, including movie previews, casting calls, dining tips, debate and dating boards. 4 questionnaires, one that you answer in your own words, 3 optional. Extremely fast operation on 22 meg hard disk drives.

LAACE (Los Angeles Atari Computer Enthusiasts). (818) 348-8644. 24 hour, 300/1200 baud, 10 meg online.

The Californian. (818) 368-7497. 300 baud, 24 hours. Color Bulletin Board System runs 24 hours a day, 7 days a week. Dedicated to the TRS-80 Color Computer, but other computers welcome. 9 sub-boards, more soon. No fees; only rule—no attempts to crash the system. Sysop: Jay B. Sanders.

Wizard of Osz RBBS. (818) 709-6978. 300/1200/2400, 24 hrs., CP/M or MS-DOS. Sysop: Mat Satuloff.

Atari Resource Magazine (ARM) (818) 446-5813. 24 hrs., 300 / 1200. Currently serving Atari and IBM computer users. Eleven message bases: general chatter, hangouts, advertise, for sale, XE Atari, ST Atari, modem, ul/dl, other BBS #s, Bible, job board. Sysops: Bob and Kim Reynolds.

RBBS (Bondwell SIG). (818) 787-0156. 300/1200 baud, CP/M and MS-DOS, 24 hours, 7 days. Everyone welcome. No time limit. Instant access to downloads. Files available for PC compatibles, Bondwell models 2 through 36. Hardware notes and tips. New product discussions. Sysop: Jon L. Bek.

Dodge City. (818) 241-4401. 24 hours, 300 baud, soon 1200. Great downloads that change every day. Sysop: The Sheriff.

The MacLodge BBS. (818) 444-9850. 8-N-1, 40 megs, 300/1200/2400. Hours M-F 3:30 pm-7 am; 24 hours on weekends and holidays. Macintosh up/downloads, plus Mac info. Mac users only please. Sysop: Dennis Cosio.

Greycastle BBS. (818) 796-5042. The bulletin board of the San Gabriel Valley Macintosh Users' Group. Operates 24 hours per day at 300 or 1200 baud. 5 megabytes available for 8 sub-boards, XModem file transfers on SnAPP software. Sysop: Bryan Menell, CompuServe ID 72307,2100, GEnie ID B.MENELL.

The Outpost RCP/M. (818) 353-8891, 300/1200 baud, 24 hours. Online games, occult and general text files, CP/M, Turbo Pascal. Sysop: Phil Hansford.

AT&T PC6300 Users' Group BBS. (818) 954-0530. 300/1200 baud, 8-N-1, 24 hours. Only So-Cal BBS "officially supported" by AT&T. Sysop: Eric L. Levinson.

Infotronics Computers BBS. (818) 282-7094, 300/1200 baud, 10 am-7 pm Mon-Sat, Sunday 12-5. 20 meg online. Message

bases and file transfers for Macintosh (or Atari ST with Mac emulator), IBM (or Atari ST with IBM emulator) and even the Atari ST computers! (All computers are welcome.) We need users! No fee and plenty of elbow room—give us a call. Running on MichTron BBS software for Atari ST.

Fantasy Plaza BBS. (818) 840-8066. 300 baud. You will be impressed!

916

The Vortex BBS. (916) 481-0194. 24 hours, 300/1200 baud. Online and RPG games, new ones start often. Message boards include private mail, Dr. Who, game hints, endless story, play by mail. Vote on movies and weekly survey. Articles and BBS listings. No Fee. Register first call. Pamela Lunsford, sysop.

"The Meeting Place" BBS 300/1200/2400 baud. 24 hours, no parity. AE line for public domain downloads. Apple, Commodore, IBM programs available for download. Numerous general files. No fees, all free. Call (916) 662-1838. Woodland, CA.

Family Radio Forum. (916) 481-6320. Christian RBBS for everybody.

SAC TIBBS. (916) 927-3012. 24 hrs, 300/1200 baud, X-modem downloads, graphics, speech. Free. Sysop: Woody Large.

NATIONAL/ INTERNATIONAL

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

TPUG World's largest Commodore Users Group. $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 1912A Avenue Rd., Suite 1, Toronto, Canada M5M4A1.

Apple Co-op. 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

Franklin Users Group International. Supporting users of II, II+, Franklins, and all compatibles. We support all members with a monthly newsletter, "The Clone Ace," a growing public domain library and personal attention. Membership $20.00 a year. Contact Douglas M. Trueman, EastWind Apt. L77, Tecumseh, MO 65760.

68796 Hackers. 68796 (68000+ IEEE-796) is the only users group supporting hobbyists constructing WICAT 150/Mini-system, Multibus, and 16/32 bit systems. In addition to the 68796 Hacker's Newsletter, we are putting together a disk library. Dues $20/year. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94062. (415) 851-7031.

Golden Apple Club, Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, 35100 Padua, Italy.

F.O.G. 15,000 member group supporting all CP/M users. Dues of $24.00/yr. include 60-80 pg. FOGHORN monthly's access to 270+ disk library, 40+ RCP/M systems, and back issues; and a technical support hotline. All meetings conducted by 140+ local groups. Gale P. Rhoades, P.O. Box 3474, Daly City, CA 94015, (415) 755-2000.

Getec s.r.l. Contact Silvio Esengrini, Via dei Guarneri Nr. 24,-20141 Milan, Italy. Phone: 39/2/5696502, 39/21 5694185.

Italtel S.p.a. Contact Michelangello Sala, C.Na, Castelletto, 20090 Settimo Milanese, Milan, Italy. Phone 39-2-4388-4288.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

KAPPA (Memphis Kaypro Users Group). Meetings at 2 pm, 1st Saturday of the month, Room 2, Jennings Hall. Contact Hugh Lamar, 5983 Macon Cove, Memphis, TN. (901) 377-4140.

The AppleWorks Users Group (TAWUG). c/o Regional Rep, 27421 Berenda Way, Hayward, CA 94544, (415) 887-7499.

FORTH Interest Group, International Office. P.O. Box 8231, San Jose, CA 95155. For further information call (408) 277-0668.

Apricot User Group (APRICUG). Box 98, Malverne, NY 11565.

Spellbinder Users' Group has an international newsletter with useful macros written by members, advice on new applications, news, and word-processing problem solving. All experience levels. California members welcome. Write P.O. Box 14, Newark, Notts, England NG24 4TP; telephone (0636) 77313; telecom Gold/Dialcom Mailbox 72: MAG95610.

AstroSoft for the IBM PC. Promotes the use of software in astronomy and related sciences; disseminates astronomical information from databases and software. P.O. Box 4451, Hayward, CA 94540-4451.

National TeleVideo Users Group. Meets 7:30 pm, 3rd Thursday, 1170 Morse Ave., Sunnyvale. P.O. Box 22007, San Francisco, CA 94122. Call for info—David, (415) 753-1552.

Apple Fontrix Club. Monthly newsletter. P.O. Box 29857, Thornton, CO 80229-0857.

68796 Hackers. 68796 (68000+ IEEE-796) is the only users group supporting hobbyists constructing WICAT 150/Mini-system, Multibus, and 16/32 bit systems. In addition to the 68796 Hacker's Newsletter, we are putting together a disk library. Dues $20/year. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94062. (415) 851-7031.

Golden Apple Club, Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, 35100 Padua, Italy.

The South Orange County Computer Club. A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

Valley Computer Club. Monthly meeting at 7 pm, first Wednesday of month in Burbank Board of Realtors Bldg., 2006 W. Magnolia Blvd., Burbank. All types of micros represented. Contact W.R. Robinson, 11850 Louise, Granada Hills, CA 91344, (818) 368-1383.

INTERFACE is a Los Angeles area gay and lesbian computer users' group for socializing and exchanging information. Meetings are open to all, regardless of level of experience. There are no dues or membership requirements. For additional information call Jim (213) 664-1127 or Pam (818) 368-0437.

San Diego Computer Society. Umbrella organization for over 40 Special Interest Groups (SIGs). Sponsors meetings, newsletters and annual computer fair. Meetings at Mesa College, 7250 Mesa College Drive, San Diego, 11:30-4, third Saturday each month. Contact Membership Chairman, P.O. Box 81444, San Diego 92138, (619) 549-3783. BBS (619) 549-3788.

Consolidated Computer Club. Meets first Fridays. 7 pm, Progressive Savings Bank, 12175 Ventura Blvd., Studio City, CA.

FORTH Interest Group, International Office. P.O. Box 8231, San Jose, CA 95155. For further information call (408) 277-0668.

Apricot User Group (APRICUG). Box 98, Malverne, NY 11565.

Spellbinder Users' Group has an international newsletter with useful macros written by members, advice on new applications, news, and word-processing problem solving. All experience levels. California members welcome. Write P.O. Box 14, Newark, Notts, England NG24 4TP; telephone (0636) 77313; telecom Gold/Dialcom Mailbox 72: MAG95610.

AstroSoft for the IBM PC. Promotes the use of software in astronomy and related sciences; disseminates astronomical information from databases and software. P.O. Box 4451, Hayward, CA 94540-4451.

National TeleVideo Users Group. Meets 7:30 pm, 3rd Thursday, 1170 Morse Ave., Sunnyvale. P.O. Box 22007, San Francisco, CA 94122. Call for info—David, (415) 753-1552.

Apple Fontrix Club. Monthly newsletter. P.O. Box 29857, Thornton, CO 80229-0857.

ASSOCIATIONS

Computer Professionals for Social Responsibility. The LA chapter is interested in computer reliability and preventing nuclear war, the socially useful direction of computer research, and similar topics. They meet most third Wednesdays at 7:30 pm at varying locations. Contact Rodney Hoffman, P.O. Box 66038, Los Angeles, CA 90066, (213) 932-1913 for more information.

Organization of Professionals, Educators, and Novices (OPEN). Tutorials, random access period, feature presentation, public domain library, and CP/M literature are all part of the monthly meetings of Osborne owners/users and MS-DOS transportables. Club BBS and newsletter. Call Frank L. Christ at (213) 498-4186 for more information. Meetings at Learning Assistance Center, CSU Long Beach, 3rd Wednesdays, 7 pm.

The North Orange County Computer Club. This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

The South Orange County Computer Club. A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

Valley Computer Club. Monthly meeting at 7 pm, first Wednesday of month in Burbank Board of Realtors Bldg., 2006 W. Magnolia Blvd., Burbank. All types of micros represented. Contact W.R. Robinson, 11850 Louise, Granada Hills, CA 91344, (818) 368-1383.

INTERFACE is a Los Angeles area gay and lesbian computer users' group for socializing and exchanging information. Meetings are open to all, regardless of level of experience. There are no dues or membership requirements. For additional information call Jim (213) 664-1127 or Pam (818) 368-0437.

San Diego Computer Society. Umbrella organization for over 40 Special Interest Groups (SIGs). Sponsors meetings, newsletters and annual computer fair. Meetings at Mesa College, 7250 Mesa College Drive, San Diego, 11:30-4, third Saturday each month. Contact Membership Chairman, P.O. Box 81444, San Diego 92138, (619) 549-3783. BBS (619) 549-3788.

Consolidated Computer Club. Meets first Fridays. 7 pm, Progressive Savings Bank, 12175 Ventura Blvd., Studio City, CA. Dues $25 yr. Send SASE to David Nussbaum, 11558 Riverside Dr., #207, North Hollywood, CA 91602.

Professional Typists/Word Processors Network to meet Sept. 9, 7 pm at Santa Monica Montessori School, 1619 20th St., Santa Monica. Network was formed for homebased typists and word processors to share information and referrals. Meetings consist of outside speaker and networking. $2 per meeting. Contact Fran Brevig, 6399 Wilshire Blvd. #1A, Los Angeles, 90048, (213) 651-1479.

Hughes Aircraft Computer Clubs. This club is for Hughes Aircraft employees only, but the BBS is open to everyone. Upload and download boards for Macintosh, IBM, Atari, Commodore, etc. Each board has its own public message service plus general message board. Contact Bud Grove, 21111 Dolores #146, Carson, CA 90745. BBS (213) 549-9640, 300/1200 baud, 24 hrs., 7 days.

Ventura Personal Computer User's Group. All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. Contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

Micro User's Group — SFV Board of Realtors. Meetings 7232 Balboa Blvd., Van Nuys, 7 pm. third Thursday. Contact Mary Lou Williams, (818) 786-2110 for more information.

South Bay Computer Education Group. Supporting Apple, Atari, Commodore, IBM and compatibles, and TI99/4A. Meeting 2nd Wednesday of each month. Time 7 pm at 3675 Torrance Blvd., Suite 202, Torrance, CA 90503. Contact Jack Ward (213) 530-4879 or Judy Adams (213) 540-5010.

UCLA PC Users Group. IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library , SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

Citizens Veto. For users with an interest in socio-economic issues who might want to try their equipment in working a model of a new approach. Primarily graphics and numbers, minimal text. Ewald O. Schlachter, (415)452-0151.

USER GROUPS

AT&T

Would like to start an AT&T 6300 Users Group. Orange County - Riverside. Contact Chuck Patten, c/o 2144 Michelson Dr., Irvine, CA 92715, (714) 851-0119.

AT&T PC6300 Users' Group. Meetings at various locations—contact BBS for latest information. Or write Eric Levinson, P.O. Box 7364, Burbank, CA 91510. BBS (818) 954-0530, 300/1200, 8-N-1, 24 hours.

ADAM

Adam Users of Southern California. Come and keep the ADAM going. We have access to some of the people who developed software for ADAM and we are going to create a base for tips, reviews, and a BBS. Get on line with ADAM. Meetings at Airport College Center, Sepulveda and Century, 4th Sunday, noon. Contact Harvey Klein, 1736 S. Bedford, LA, (213) 553-1062 or Paul Shecter, 5545 Lindley, Tarzana.

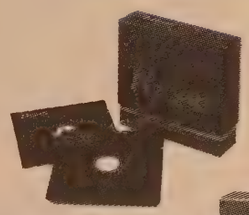
ALPHAGRAPHICS

Alphagraphics. Contact Stella or Jim Muller, 16425 Bernardo Ctr. Dr., San Diego, Ca. 92128, (619) 451-2250.

AMIGA

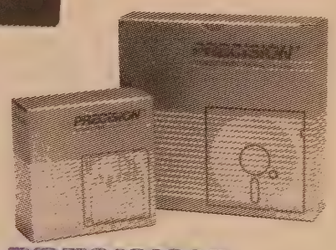
Amiga Users Group. A chance to meet and talk with other local Amiga users, review software, and exchange public domain software. Meetings 7:30 p.m., 1st Tuesday. Call Roy

Xidex.
The one name to remember in data storage.



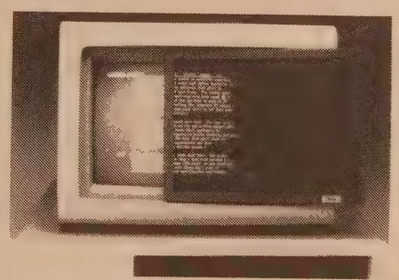
DISKETTES

XIDEX is the world's leading manufacturer of flexible media.



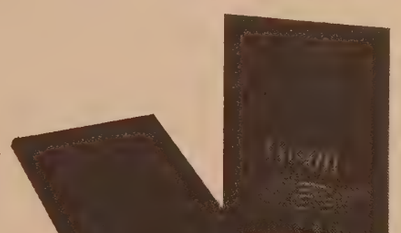
PRECISION™ FLEXIBLE DISKS Manufactured by Xidex®

ANTI-GLARE SCREENS



Dysan **BERNOULLI DISK CARTRIDGES**

100% Iomega Compatible



...AND A FULL LINE OF *Dysan* & CDC DISK PACKS, 1/4" TAPE CARTRIDGES, 1/2" COMPUTER TAPE AND DIAGNOSTIC DISKS.

YOUR LOCAL XIDEX DEALER IS YOUR ONE-STOP SHOP FOR ALL YOUR DATA STORAGE NEEDS.

IRVINE
Network Computer & Office Supply
17932 Sky Park Circle
(714) 250-4949

MISSION VIEJO
Data West
25392 Madero, #M
(714) 770-3344

RIVERSIDE
Software Service Center
666 Indiana Ave.
(714) 787-4833

Newport Stationers
17681 Mitchell No.
(714) 863-1200

NEWPORT BEACH
Newport Stationers
4229 Birch St.
(714) 863-1200

TUSTIN
Software Service Center
13828 Red Hill Ave.
(714) 544-0299

Distributed by American Computer Products (619) 292-8242
Dealer Inquiries Welcome

Wagner, (714) 892-5500 for more info.

Amiga Friends-Amiga Association of Southern California. Meetings at 12 pm on the third Sunday of the month in the Orange County area. Contact Al Cheser at (714) 635-2100 for more information.

South (LA) County Amiga Users Group. A chance to meet and talk with other Amiga owners. Software reviews and public domain library. Meets at Mid Cities Bank in Bellflower on Lakewood Blvd., just south of 91 freeway, on 1st Tuesday at 7:30. Call Roy Wagner at (213) 832-3361 x4689 for more info.

San Fernando Valley Amiga User Group. Meets 1st Thursday, 6:30-9 pm, Valley Federal Savings, Reseda and Nordhoff. Membership $25/yr. Disk of the month, p.d. library, demos, SIGs, newsletter, answers! Contact Al DiPaolo, president, (818) 786-8624.

Bits & Pieces Amiga Group of Anaheim. Meets every Tuesday 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, technical help, guest speakers, much more. Contact John Callaci or Mike Dalton (714) 630-8644/ 630-8711 for information.

Color America. Amiga SIG meets 1-3 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. For information contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

APPLE

Original Apple Corps. First Apple group ever. Contact Russ McCaffrey, (213) 371-7326, or Fred Duffy, (213) 396-5515.

The Orange Apple Computer Club meets 9 am-12 pm the first Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have over 700 members, ranging from beginners to certified Apple developers, and a large Apple II public domain software library. There are several very active special interest groups which include Apple III, educators, Apple II, modem and investors. For further info call (714) 770-1865.

South Bay Apple III User Group. Over 85 Apple III users share information, programs, group purchases, product demos. Special interest groups meet 1st Tuesdays. General meetings on IIIrd Tuesdays at 7:30 p.m., UCLA Harbor General Hospital, Room III. Corner of Vermont and Carson, off 110 Fwy. Contact Gary Fortune, P.O. Box 432, Redondo Beach, CA 90277, (213) 316-7738.

Tri City Apple User's Group (Glendale, Burbank, Pasadena). New group formed from merger of Pasadena and Wabash groups. Meetings are scheduled the third Thursday of the month at Casa Colina Neurological Learning Center, 50 North Hill St., Pasadena at 7:30 pm. Contact Marie Kaden at (818) 846-6682. Dues $12./yr.

North San Diego Apple Club. Meets 1st Tuesday of each month at Meadowbrook Middle School, Meadowbrook Lane, Poway, 7 pm. Contact Bill Walker (619) 579-9649 or Chuck Newby (619) 566-0387, P.O. Box 75, Poway, CA 92064.

SD Alliers. Want to start Apple III user group in San Diego area. Contact James Fair, P.O. Box 1592, Lakeside 92040, (619) 561-3270.

Applejacks of the Inland Empire. Primarily for Apple II users. Meets first Wednesday and third Thursday of the month, 7-9 pm, at Norman Feldheym Central Library, 555 W. 6th St., San Bernardino. Contact Scott Zehm at (714)883-2234 for information, or write Applejacks, P.O. Box 23025, San Bernardino, CA 92406.

ASHTON-TATE

dBUG-dBASE Users Group. For all levels of dBase users from beginners to expert. Meets 3rd Monday each month, 7-9 pm, Blue Cross Bldg., 21555 Oxnard, Woodland Hills. For more info contact Bruce Ascough, (818) 789-0723.

dBASE III SIG of UCLA PC Users Group. Meets once per month in Santa Monica—date varies. Contact Tom Rombouts, 1428 N. Curson #6, LA, CA 90046, (213) 874-7471.

ATARI

Atari Computer Association of Orange County (ACAOC). Join one of the biggest Atari user groups in Southern California. Monthly magazine, large public domain library, and club BBS. Dues $24.00/year, $18.00 for non-attending out-of-town members. Meetings at Golden West College, Room 131, Huntington Beach, 1 pm, fourth Sunday of the month (ST meeting same time and place on second Sunday). P.O. Box 9419, Fountain Valley, CA 92728 or (714) 838-3099 for more information.

West LA Atari Users Group. Come join fellow Atarians! Dues are $20.00/year. Newsletter, P/D library, ATR-Sig, discounts, guest speakers. Please call for directions to meeting room! If you're reading this, you belong with us. Meetings first Wednesday of the month, 7 pm, Paul Revere Jr. H.S., 1450 Allenford Dr., Brentwood. Call John Scheid, pres., for more information (213) 829-7239.

Los Angeles Atari Computer Enthusiasts (LAACE). Join Los Angeles' largest and oldest Atari Users' Group, now in our 6th year. Enjoy our monthly meetings and newsletter. Participate in our educational SIG (Special Interest Groups) seminars and meetings. Learn how to get the most out of your Atari; access our hundreds of public domain programs; benefit from the help and experience available from our experts. Come as our guest on the 1st Tuesdays of the month (2nd Tues if holiday occurs in 1st week) at 7:00 pm at Granada Hills High School, 10535 Zelzah Ave., Granada Hills, CA. For full benefits, including member access to our 10 meg BBS, dues are $20/yr ($25 for entire family). Write P.O. Box 7752, Van Nuys, CA 91409 (include your phone number) for additional information.

Santa Clarita Valley Atari Computer Enthusiasts (SCV-ACE) invite you to join us. Meetings are the first Thursday every month from 7 to 9 pm at the Moose Lodge, 18000 W. Sierra Hwy., (1/2 mile north of Soledad Canyon Road), Canyon Country. For info call Bob at (805) 259-6540.

Atari Computer Enthusiasts Network (ACENET). Umbrella group representing many Southern California Atari groups. If you can't locate a user group in your area, contact John Tarpinian at 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

Hooked on Atari Computer Keyboard Society (HACKS). Meetings on the first Saturday of the month in the Burbank area. For more information contact John Tarpinian, 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

AA-Atari Users Group. Meets at Upland Public Library, 450 N. Euclid Ave. Atari 400, 800, XL/XE group meets second Tuesday, 6-9 pm. Call Juan Valdes, (714) 980-6841 for more info. 520/1040ST group meets fourth Thursday 6-9 pm. Call Jay McCarthy, (714) 829-8722 for more information.

MAST—Mid-Cities Atari ST. Meetings at 9025 E. Artesia Blvd., Bellflower, first Sunday, 7 pm. Contact Jane Hughes, 9701 E. Artesia Blvd., Bellflower, (213) 867-0626.

South Bay Atari Computer Enthusiasts (S.B.A.C.E.). Meets 2nd Tuesdays, 7:30 pm, VFW Hall, 1865 Lomita Blvd., Lomita. Meetings consist of guest speakers from software and hardware suppliers, demos by members, q & a periods, along with current Atari rumors. Newsletter, published 6 times a year, included with $20/yr membership fee. Write S.B.A.C.E., P.O. Box 83668, Los Angeles, CA 90083, for more information, or call Dick Reaser, (213) 645-7063.

AUTOCAD

AutoCAD Los Angeles Users Group. Meetings fourth Thursday of the month (except November and December—Meetings Nov. 20 and Dec. 18), Church of Religious Science, 260 North Pass Ave, Burbank. Contact Tesfaye Abagaz, (818) 843-5770 (work).

COMMODORE

Club 64 National user group. Monthly newsletter, BBS, group purchasing, public domain software, much more. Contact: Robert Johnson, (213) 925-4049.

San Diego Commodore Users Group. Meets third Wednesday, 7 pm, 2557 3rd Ave. (Women's Club), San Diego. For all Commodore machines. Contact Jane Campbell, (619) 584-2872 for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

San Fernando Valley Commodore Users Group. Meets second Wednesday of the month at Patrick Henry Junior High on Louise Ave. between Devonshire and San Jose in Granada Hills, near 118/405 freeway interchange. Contact Tom Lynch, 21208 Nashville, Chatsworth, CA 91311, (818) 709-4736.

San Luis Obispo Commodore Computer Club 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

The Commodore Users Group - San Juan Capistrano. This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capo, San Juan Capistrano. For info call 496-5745.

Orange County Commodore Technical User's Group C-TUG. Orange County's Commodore user group. Club newsletter, two 300/1200 baud BBSs, door prizes, SIGs in Comal, DOS protection, data bases, wpros, and BASIC. Custom software and ROM chips, and just plain good times. Meetings at Mercury Savings and Loan, 4th and Newport, Tustin, fourth Sunday of the month, 10:30 am. Contact Ellis L. Higham, corresponding secretary, P.O. Box 8342, Orange, CA 92664, (714) 554-9222.

C-TUG South Orange County. Classes on BASIC, M/L & Assembler; large public domain library, club newsletters. 300/1200 Baud Printer BBS. (714) 458-1258, El Toro. Meetings 2nd Saturday of the month, Mercury Savings, 23021 Lake Center Drive, El Toro, 2-6 pm.

Hollywood User Group (HUG) for Commodore computers. Meets 2nd Saturday of the month at Plummer Park, Conference Room, 7377 Santa Monica Blvd., West LA at 12 noon. Contact HUG BBS (213) 874-8256 (24 hrs) or write HUG, P.O. Box 38313, Hollywood, CA 90038.

Southern California 64 Users Group. Learn more about your Commodore 64. Extensive public domain disk library. Meet at Mid Cities Bank in Gemco shopping center on Bellflower, just south of 91 Freeway, 7 pm, 3rd Tuesday of every month. Contact Joe Allain, 3852 Riverton, Studio City, CA 91604, (818) 985-2647.

C-128 West UG. User group for owners of the Commodore C128, from beginner to advanced; PD software available. New group still assessing the needs and interests of members. Intend to network with other user groups on C128 software. Meetings 2nd Tuesday, 7:15 pm, McKinley School in Santa Monica, Santa Monica Blvd. and Chelsea. Contact Don Campbell (213) 828-9308.

Inland Empire IBM/C64 User Group. Major subjects are local area networks, small business software, data comunications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

Commodore Creations Users Group (CCUG). We offer library, newsletter, and other services; upcoming BBS; soon to be member of Commodore World. Meets 2nd or 3rd Sunday of each month 2-4 pm. Membership dues $26 per year. Call or write for info: Brian R. Klotz, 1135 Coronet Ave., Pasadena, CA 91107 (818) 351-8198.

Back-Country Commodore Club. Meets first Thursday 7 pm, Ramona Lutheran Church on 14th St. Check us out for relaxed, informative group discussions. We're here to help those with problems and to promote better uses of Commodore 64s, 128s, and Amigas. Contact Gerry White at (619) 789-3209, 511 14th St. #D-13/ P.O. Box 373, Ramona, CA 92065. Meetings at 617 16th St., Ramona, CA 92065, 7 pm, 1st Thursday each month.

General Dynamics Commodore Computer Club. Meets third Tuesdays, 4:30 pm, Convair Rec. Assn. room C. Commodore 64 and 128 only. Contact Al Wilson, (619) 429-6790 for information.

C.U.B.E. Commodore Users, Buffs, and Enthusiasts meet first and third Mondays of each month, 7:30 pm, East Side Christian Church, 668 Obispo, Long Beach. Contact Lynn Cothern, 2005 Palo Verde #163, Long Beach, (213) 421-1041 modem.

Com-Pacs. Meetings and/or copies of public domain software and discussion of problems. New computer C64/128 technologies. Sales and swaps of equipment. Meetings at 2354 Elmgrove St. Los Angeles, CA, Saturdays, 3 pm. Contact Lon Damiani, (213) 222-2277.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

Pacific Computer Club (Commodore). Meetings 391 S. Madison, Pasadena, 2nd Thursday, 7 pm. Contact Norman Sauppe, (818) 792-9840.

CPU—Commodore Users Group. Meets third Saturday of the month, 9 am-noon, Great American Federal, 23688 El Toro Rd., El Toro. Discussion, individual help, demos, problem solving, pd software, workshops. $12/yr adults, $6/yr students. For information call Chuck French, (714) 582-9464.

FCUG/SixtyFourum. PD library, newlsetter, meeting 3rd Saturdays, 8:30 am. Contact George Bearden, P.O. Box 16098, Fresno, CA 93755, (209) 291-7053. BBS (209) 431-6288.

Central Coast Commodore Users Group. Meets 3rd Tuesday of each month. Contact Gilbert Vela, 4237 Plumeria Ct., Santa Maria, CA 93455. CCCUG BBS (805) 934-2216, 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads.

Diamond Bar User Group (DBUG). The Diamond Bar User Group is dedicated to the Commodore line of computers, C64, C128, and the Amiga. The club has a large public domain software library base, especially Commodore CP/M. Free raffles, technical discussions, software demonstrations, and the monthly freebie disk can be found at most any meeting. Meetings 2nd and 4th Wednesdays, 7 pm, Diamond Bar Library, 1061 S. Grand Ave., Diamond Bar, CA. Contact David Dietzel, (714) 947-1882 for more information.

South Orange County Commodore Programmers and Users (CPU). Meetings at Great American Savings, 23688 El Toro Road, El Toro, fourth Saturdays, 9 am. Contact Don Gribble, Secretary, 25401 Champlain Rd., Laguna Hills, CA 92653, (714) 830-2430 or (714) 855-8320.

West Orange County Commodore User Group. Meetings 1st Sundays, 1 pm, Mercury Savings, Buena Park, corner of Valley View and Lincoln. Write for info: P.O. Box 6441, Buena Park, CA 90622; or call Mark Stanford, (714) 772-4182 or Art Collins (714) 821-0195.

Bits & Pieces Amiga Group of Anaheim. Meets every Tuesday 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, technical help, guest speakers, much more. Contact John Callaci or Mike Dalton (714) 630-8644/ 630-8711 for information.

The Pasadena Commodore Computer Club meets the first and third Wednesday of the month at 7 pm in the Circadian Room of the cafeteria on the campus of Pasadena City College, SE corner of Colorado and Hill. For more information write to PCCC, P.O. Box 1163, Arcadia, CA 91006, or call (818) 447-2212 after 2:30 Pacific time.

CORDATA

Cordata Users Group. Meets 2nd Fridays, 7 pm. 20630 Lassen St., Chatsworth. Contact Alicia Fahey, (818) 709-6202 for information.

DEC

DECUS Inland Empire PC-LUG Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software /applications assistance available; FIDO bulletin board. Meets Cal Poly-Pomona campus, Library Bldg15, Room 12, 7:30 pm 3rd Tuesday of each month. Contact Jan Snyder, 380 Verona St., Upland, CA 91786, (714) 620-7511 ext. 4376.

DECUS Southern California PC-LUG. Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software/applications assistance available; FIDO bulletin board. Meets 10;30 am, 1st Saturday of the month, Press Telegram Bldg., 3rd Floor, 604 Pine Ave., Long Beach, CA. Contact Bill Davis, 1457 W. 219th St., Torrance, CA 90501. (213) 827-4600.

DECUS Rainbow Pacific PC-LUG Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software /applications assistance available; FIDO bulletin board. Meetings at Digital Equipment Corporation, 6101 W. Centinela Ave., Culver City, CA 90230, 7 pm, 2nd Wednesday of each month. Contact Don Braums, 3312 Summertime Lane, Culver City, CA 90230, (213) 202-1784.

EASYBUSINESS

Easybusiness Systems Users Group. CPAs, Consultants, and other business people interested in Computer Associates Easybusiness Systems' Accounting Software. For information, contact Gary Robinson (213) 398-6544.

EPSON

Cursor Club Epson 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

San Fernando Valley Epson User Group. Meetings at Fallbrook Square Community Room "The Meeting Place" off the Food Court in the new Fallbrook Mall, 6633 Fallbrook Ave., Canoga Park, between Victory and Vanowen. Meets 3rd Wednesday of each month at 7 pm. Contact Pat Denslow, (818) 881-4029 for information.

Epson Users Group of Orange County. 6075 Jeffrey Mark St., Cypress, CA 90630, (213) 414-4817.

Epson Users of San Diego. P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

High Desert Epson Users Group. 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

PSC/QX. 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

South Bay Epson Users Group. 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

Epson Computer Club of America. Monthly meeting 2nd Saturday of the month at 10 am, Mercury Savings and Loan, Irvine Blvd. one block east of Newport Ave. Messages Epson West Bulletin Board (714) 630-7104 User area B:15. Monthly newsletter "The Help Key." Contact Roy Boorman, 4021 Winterhaven St., Yorba Linda CA 92686, (714) 524-9483.

TUG-NET Epson SIG meets 2nd Wednesdays, 7 pm, Mercury Savings, 5201 Laurel Canyon Road, North Hollywood. Call (818) 705-6300 for information.

FORTH

FORTH Interest Group, Los Angeles Chapter. Meets 4th Saturday, 10 am, Hawthorne Public Library, 12700 S. Grevillea, Hawthorne. Contact Phil Wasson (213) 649-1428.

FORTH Interest Group, Orange County Chapter. Meets 1st and 4th Wednesdays, 7 pm. Call Noshir Jesung for info. (714) 842-3032.

FORTH Interest Group, San Diego Chapter. Meets weekly, Thurs., 12 noon, contact Guy Kelly (619) 268-3100 ext. 4784.

HEWLETT-PACKARD

Club of Hewlett - Packard Hand-Held Users (CHHU). HP handheld users worldwide support CHHU as a noncommercial, open, independent club dedicated to applying today's machines and making a contribution to the true personal computer of tomorrow. Send SASE for more info to Richard J. Nelson, 2545 W. Camden Place, Santa Ana, CA 92704, or call (714) 754-7757 for meeting directions.

LA-SCRUG. Hewlett - Packard Series 100 business computer user group. Demonstrations and seminars on HP software and equipment. Meetings at 5161 Lankershim Blvd., North Hollywood, 7-9 pm, 2nd or 3rd Thursday of the month. Contact Dave Mark, P.O. Box 60975, Pasadena, CA 91106, (818) 794-4969.

IBM

The Greater South Bay IBM PC Users Association. Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Thursday of each month. For info call (213) 398-8153.

Technical Users Group (TUG-NET). For CP/M & MS-DOS PC users. Meets on the first Thursday of each month at 7:00 pm. Valley Plaza Park, Community Room, 12240 Archwood St., North Hollywood, CA. Contact Mike Faith - (818) 994-6567. DOS SIG meets 3rd Mondays, 7 pm, Sears S&L, Van Nuys. Call (818) 701-0512 for information. BBS (818) 882-6045.

UCLA PC Users Group. IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library , SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

Pasadena IBM User's Group. Meets 3rd Wednesday of each month at Cal Tech, Steele Building, Room 102. For more info send SASE to Steve Bass, 711 E. Walnut Street #306, Pasadena, CA 91101, (818) 795-2300.

Inland Empire IBM/C64 User Group. Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino, Ca 91708-0988.

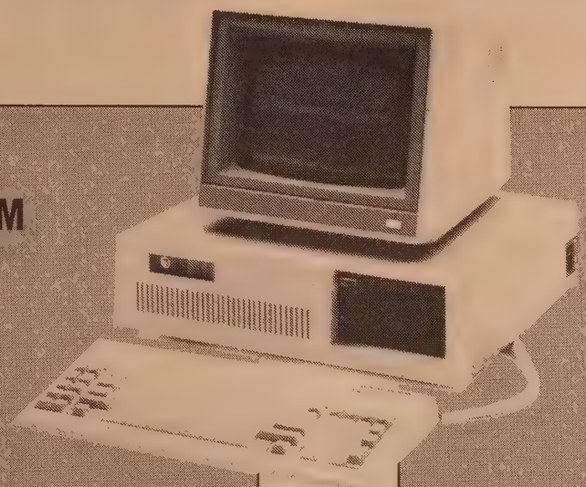
The Foothill Computer Club. An IBM-PC users group. CCCUG — Crescenta-Canada-Compatible Users Group. P.O. Box 1265, La Canada, CA 91011, (818) 790-6672. Meetings 1st Wednesday of the month at 6:30 pm at the Glendale Federal Bank, 2350 Honolulu, Montrose, CA. For newsletter send SASE to above address.

LOWEST PRICES ANYWHERE!

IBM PC/AT/XT COMPATIBLES

RUNS: PC-DOS, MS-DOS, CURRENT CP/M CPM-86, UNIX
DEALERS: CALL FOR QUANTITY PRICES

Specialist in medical & dental office management systems



PC/XT BASIC SYSTEM

INCLUDES:
- XT FLIP TOP EXCELLENT CASE
- 4.77 MHZ, 640K EXPANDABLE
- 8 EXPANSION SLOTS
- 150 W POWER SUPPLY
- AT LOOK ALIKE KEYBOARD
- FLOPPY DISK CONTROLLER CARD
- 360K FLOPPY DRIVE (JAPAN MADE)
- 256K MEMORY ON SYSTEM BOARD
- FULLY ASSEMBLED AND TESTED

ONLY ~~$469~~ NOW $372

ALL SYSTEMS— 1 YR. WARRANTY

PC/AT BASIC SYSTEM

INCLUDES:
- AT SLIDING COMPUTER CASE
- 6.8 MHZ, 1 MB EXPANDABLE
- 8 EXPANSION SLOTS, CMOS CLOCK/CALENDAR
- 200 W POWER SUPPLY
- AT STYLE KEYBOARD
- AT FDD & HDD CONTROLLER
- 1.2 MB FLOPPY DRIVE (JAPAN MADE)
- 512 K MEMORY ON SYSTEM BOARD
- FULLY ASSEMBLED AND TESTED

ONLY ~~$1449~~ NOW $1149

CLEARANCE SALE

- IBM PC/AT JR SLIDING CASE $29
- MINI AT FOR XT (FLIP TOP) 35
- AT FDD & HDD CONTROLLER 195
- EGA CARD 199
- TAPE BACK UP SYSTEM 420
- AT SLIDING CASE 62
- XT FLIPTOP CASE 24

SAVE MORE!

TTL HI-RES MONITOR & MONOGRAPHIC W/PRINTER CARD ADD $145
COLOR HI-RES MONITOR & COLOR GRAPHIC CARD ADD. 335
FOR XT 20 MB HARD DISK & W/D CONTROLLER ADD 365
FOR AT 20 MB HARD DISK ADD 310
MITSU 1410 14 INCH 4 STRIP EGA/CGA 640x350 & EGA CARD ADD 595
SAMSUNG 1452M 14 INCH 31 DOT PITCH EGA/CGA 640x350 & EGA CARD ADD 585
FOR XT CLOCK, CALENDAR, GAME PORT SERIAL PARALLEL PRINTER ADD 55
FOR AT SERIAL, PRINTER PARALLEL PORT ADD 65

SPECIAL:

- CUSTOM DESIGN ANY SOFTWARE & HARDWARE—MAIL ORDER WELCOME
- ASSEMBLY AND REPAIRS OF MOST MAJOR HARDWARE
- C.O.D. SHIPPED IMMEDIATELY CASHIERS CHECK OR MONEY ORDER
- S-100 BUS & MINI COMPUTER MAINTENANCE SERVICE

CLONE MASTERS

(formerly Advanced Computer Co.)
MAIN OFFICE: 12912 Brookhurst #250, Garden Grove, CA 92640

VISA
master charge

ORDERS: (714) **220-9494**
HOURS: MON.—SAT. 9 AM—9 PM

FRANKLIN PARK OFFICE
4001 FLEETWOOD AVE.
FRANKLIN PARK, IL 60131
(312) 451-9600

ANAHEIM OFFICE
1027 N. MAGNOLIA AVE.
ANAHEIM, CA 92801
(714) 220-9500

EL CAJON OFFICE
P.O. BOX 12046
EL CAJON, CA 92020
(619) 447-1412

CANOGA PARK OFFICE
8011 OAKDALE AVE.
CANOGA PARK, CA 91306
(818) 709-0206

GARDEN GROVE OFFICE
10428-A STANFORD
GARDEN GROVE, CA 92640
(714) 638-3922

HUENEME OFFICE
444 EAST CLARA PORT
HUENEME, CA 93041
(805) 986-3906

NOCCC Lotus & Business SIG. Subgroup of North Orange County Computer Club. Meets first Sundays at Chapman College in Orange, CA, 11:15 am. Lotus 1-2-3 and business application demos, speakers. Call to verify dates, address: Vance Joachim, (714) 998-8080. P.O. Box 3616, Orange, CA 92665.

The Riverside IBM Computer Club. Meetings at Computerland Riverside, Monday 7 pm. We specialize in software demonstrations, sharing of public domain programs, and mutual problem solving activities. Contact Jimmie E. Heidecke, (714) 685-5407 for info.

Orange Coast IBM PC User Group. A not-for-profit organization open to anyone with or considering the purchase of an IBM PC or compatible computer. Monthly meetings, usually on the last Saturday of the month, consist of one or two guest speakers, a short business session and a period for random access. OCIPUG has public domain and user supported software, a monthly newsletter and a bulletin board. Membership is $20 per year. Meetings at Orange Coast College, Science Hall, Costa Mesa, last Saturday of the month, 9 am–12 noon. Contact Tom Sutro, P.O. Box 6100-211, Costa Mesa, CA 92628, (714) 850-0474.

Valley Computer Club. IBM PC Users Group meets first Wednesday each month. The group is part of Southern California's original computer club. Its purpose is to distribute public domain software and exchange info on the PC. Meetings at 2006 W. Magnolia Blvd., Burbank, 7 pm. Contact Sy Lieberman, (818) 981-9593.

Kern Independent PC User Group (KIPUG). Meets the 2nd Thursday of each month beginning at 7 pm at the County Superintendent of Schools Boardroom, 5801 Sundale Ave., Bakersfield. Contact Jim Harrer, P.O. Box 2780, Bakersfield, CA 93303, (805) 395-0223.

Bits & Pieces IBM of Orange County. Meets at 1130-A N. Kraemer Blvd., Anaheim, every Saturday at 10 am. Call John, (714) 630-8644 for more information.

Ventura Personal Computer User's Group. All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

Thousand Oaks Personal Computer Club (TOPCC). Meets fourth Thursday, except November and December (3rd Thursday), at Home Federal Savings, 164 W. Hillcrest Dr., Thousand Oaks—6:30 pm beginners, 7:30 regulars. Group is five years old and has approximately 150 members. Contact Bob Tracy, (805) 482-7092 for more information.

Southwest PC Users Group. All computer users are welcome. Meetings 3rd Saturday of each month; call for meeting place. Christine Tripp, (213) 935-4105.

Tulare County PC. Meetings at Genesis Computers, 3rd Thursday each month. Call Roger Jenan, (209) 733-8204 for information.

KAYPRO

Lakewood/Long Beach KUG is a group of Kaypro computer owners dedicated to helping each other solve problems and share information and public domain software. The meeting is open to all. Meetings at Midcities Bank, 9025 Artesia, Bellflower, CA, 2nd Wednesday of each month; 7 p.m. Contact Melvin Pasley, 4566 Shadeway Rd., Lakewood, CA 90713, (213) 421-3094.

Kaypro UG, 3134 N. Palm Shields, Fresno, CA 93704.

K-West, Orange County Kaypro users group. Meetings 2nd Monday of the month, Glendale Federal Savings, 100 Newport Center Drive, Newport Beach.

Club 16. Meets once a month in Costa Mesa at 2790 Harbor Blvd., (CBS Store) to share knowledge of the 16 bit world. It is a small group so that everyone can get to know each other and share. Large public domain library. Contact Peggy Lloyd, (714) 645-9868 for information.

LA Kaypro Users' Group. Meets 3rd Tuesday, 6:30-9:30, Beverly Hills High School, 241 Moreno Ave., Room 125, near Olympic and Spalding. Contact Allyn Franklin or Barry Cole, (213) 278-3748 or (213) 390-3851.

Kayos Kaypro Users Group. Kayos Kaypro User Group invites Kaypro and CP/M users to meetings at TRW in Redondo Beach, 6:30 pm, third Monday of the month. (213) 379-8339 for details.

TUG-NET Kaypro and Osborne SIG meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. Call (818) 882-1693 for information.

LEADING EDGE

Leading Edge User's Group. A user's group of predominantly Leading Edge users and other similar machines with high clock speed. Public domain software, demos of software/hardware. No fees. Meetings 7:00 pm, 2nd Wednesday of the month, 12792 Valley View, Suite F, Garden Grove, Contact Bruce Fruchter, (714) 891-2001 for information.

LISA

The Lisa Club of Los Angeles. This is a brand new club just forming for Lisa owners. Meetings are scheduled to be the first Monday of each month. They have no permanent meeting place as of yet, but for information call (213) 852-4994.

MACINTOSH

Los Angeles Macintosh Group (LAMG) Membership fee is $25/yr or $15/yr for students. Membership includes 12 issues of MACDIGEST newsletter, access to public domain library, BBS, discounts at local stores. Join the largest Mac group in So Cal with over 500 members. Meetings at Madison Elementary School, 11th and Arizona Ave., Santa Monica, 3rd Thursday of the month. Call for meeting info: Eric Anderson, 12021 Wilshire Blvd., #349, LA, (213) 392-5697.

Ventura County Macintosh Club Mac and Lisa users invited. Membership $21/yr.; newsletter, software library, discussions and ideas. P.O. Box 7754, Oxnard, CA 93031, (805) 983-1610, (805) 499-2824.

Mac Valley Users Group. For $20/yr. membership fee you too can enjoy meetings chock full of software/hardware presentations, public domain software library, Mac articles index, software and accessory raffles, and help hotline. Broad range of users, very friendly to novices. Meetings at Burbank High School Cafeteria, Burbank Blvd. at 3rd St., Burbank, CA, third Tuesday of the month, 7:30 p.m. Contact Ruth Stever, P.O. Box 4297, Burbank, Ca 91503, (818) 848-1277.

MAC-HACers. Macintosh computer club for Hughes Aircraft employees only. Meetings 3rd Wed. each month, H.E.S.E.A. Club House, 1216 Imperial, El Segundo, CA 90745, across from LAX, 5 pm. Contact Bud Grove, (213) 606-2212, 5am-3pm, (213) 549-9664.

Orange Apple Macintosh Group. The Macintosh Meeting of the Orange Apple Computer Club meets 1 pm-4 pm the 1st Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have the best of the public domain software for the Mac, and several fun special interest groups which include Fast Start, Mac Modem, and Deciphering Mac Public Domain. For further info, call (714) 770-1865.

Mac Orange. Bi-monthly newsletter, monthly meetings, largest Macintosh user group in Orange County (400+ members). $20 annual dues. Meetings Johnson Center, Santa Ana College, 3rd Wed. Contact Taylor Barcroft, P.O. Box 2178, Huntington Beach, CA 92647, (714) 842-0518 for info.

MacBuddhist. Learn about computer assisted dharma study and application to daily living. Network of on-line Bodhisattvas sharing material crossing sectarian lines. Monthly meetings, last Saturday of the month. Contact secretary, College of Buddhist Studies, 933 South New Hampshire, Los Angeles, CA (213) 739-1270.

Corporate User Groups SIG of Los Angeles Macintosh User Group establishes communication between leaders of Macintosh User Groups of companies in the greater Los Angeles area. The main purpose of the group is to share information on Macintosh use in corporations. It also consults company recreation clubs in starting and supporting company Macintosh groups. Contact Charles Shipp, (213) 970-6300w, (213) 833-9186h, for more information.

San Gabriel Valley Mac Users Group. Meets once a month to disseminate information about the Macintosh. Meetings are held on the first Thursday of every month at the City of Hope in Duarte, 7:30 pm in cafeteria complex Room B. The SGVMUG has special interest groups such as Power Users' SIG and a Novice SIG. Public domain library, monthly newsletter. Membership is $20 per year. Contact Frank Chavez on the 24 hour information line (213) MUG-ICON, or write SGVMUG, P.O. Box 792, Sierra Madre, CA 91024.

MORROW

West LA Morrow User's Group /The Morrow Minority. 40 dedicated members, with special emphasis in WP; PD library. No dues, but $1 at door to pay for refreshments. Some classes and informal newsletter. If new, call to reserve space: Dr. Bernice Ennis, (213) 276-9096, 1833 Franklin Canyon Dr., Beverly Hills, CA. Meetings 2nd Wednesday of the month.

LA Morrow User Group. Meets 3rd Thursday each month, North Hollywood Recreation Center, 11430 Chandler Blvd., North Hollywood. Contact Jack Byers, (818) 347-7283 for information.

NEC

Orange County NEC Users Group (OCNUG). Dedicated to NEC-APC computers, CP/M-86 & MS-DOS. Always room for any experience level. Meets 3 pm, third Saturday of the month. 6642 Lenore, Garden Grove. CA 92645. Call John Bingel at (714) 897-7656 for more info.

The Los Angeles Area NEC APC Users Group meets on the first Saturday of each month at 3 pm at the I/O Interface Computer Mart, 6241 West 89th St., Los Angeles, CA 90045. Telephone (213) 410-9824. There is no meeting in January, and occasionally a meeting may be cancelled or postponed, so it is best to call before coming.

OLIVETTI

Olivetti PC User Group forming. Send SASE to Stan Cory, 29500 Heathercliff Rd. #86, Malibu, CA 90265, or call (213) 457-3879.

OMNIS 3

Omnis 3 User Group. Meets every third Wednesday of the month at Grant St. Elementary School in the auditorium. Address is 2368 Pearl St., Santa Monica. Time is 7:30 pm. The use of Omnis3 and Omnis 3+ in data processing information management systems is covered, from setup to advanced features. Expert and novice welcome. Call Zachary Sempers at (818) 701-1355 for information.

OSBORNE

TUG-NET Kaypro and Osborne SIG meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. Call (818) 882-1693 for information.

Osborne Komputer Owners Klub (OKOK) meets 2nd Tues./mo. at 6:30 pm on the Cal-Tech campus in the Winnette Lounge Building on San Pasqual Street in Pasadena. Contact Lionel Sorraco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Osborne National Users Group meets 2nd Fri./mo. at 7:30 pm at Wizard of Oz, 20630 Lassen St., Chatsworth, CA 91311. Contact Art Schlefstein, (818) 709-6969.

PARADOX

Southern California Paradox Users Group. Anyone with an interest in the relational database Paradox please send an SASE to Brian Smith, 350 Palos Verdes Blvd., Redondo Beach, CA 90277. Meetings are being held in LA and Orange County.

RADIO SHACK TRS

South Bay Color Computer Club TRS-80, TDP-100, Dragon. Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

OCTUG-Orange County TRS-80 Users Group. Meets the 3rd Sunday of each month at Hashinger Auditorium, Chapman College, on Center St. between Palm and Sycamore, Orange, CA, 12:30 pm. Devoted to the Tandy line of computers (TRS-80 Models 1,3,4 and the new Tandy 1000, 1200, 2000, 3000). We are slowly getting more people in the MS-DOS Special Interest Group. We welcome any and all new people. Contact Franco Collino, (714) 750-0887.

The California Computer Federation. Spearheaded by some of the best authorities on the TRS-80 color computer, the California Computer Federation promises to be a huge success. For additional information write to CCF Info, 366 W. Providencia, Burbank, CA 91305, or phone BBS #s (818) 886-6041 or (818) 787-0433. Meetings in Van Nuys area, fourth Tuesday of each month.

San Gabriel Valley TRS-80 Users Group. Supporting users of TRS-80 and Tandy computers. Meets 2nd Friday of each month at Arcadia Park Senior Citizens Center at 7:30 p.m. Monthly newsletter, various SIGs, lotsa fun & info. Contact Dan Dresselhaus. (818) 914-5831 days.

VTUG (Valley TRS-80 User Group). Devoted to users of TRS-80 Model I, II, 4, 4P, LNN or MAX-80. Speakers, presentations, raffle drawing, refreshments. No admission or membership fee, new members welcome. Meetings at Glendale Federal Savings, 71129 Topanga Canyon Blvd., Canoga Park, 3rd Tues., 7:30 pm. Contact Fred Blechman, (818) 346-7024.

VTHGValley TRS80 Hacker's Group. Programming and problem solving for Models 1, 3, and 4. No vendors, no machines. No dues. No sweat. Bring a blank disk and get NEW public domain software. Meetings 1st Fridays, 7:30 pm, Valley Plaza Park Auditorium, 12240 Archwood St., North Hollywood. Call Eric Bagai at (818) 982-0467 for more information.

Tandy 1000 (The MUG) Meets fourth Wednesdays, 7 pm, 9027 E. Artesia, Bellflower, CA. Contact Dick Sherwood, 4014 Centralia St., Lakewood, 90712, (213) 421-4014. The MUG RBBS (213) 425-0022, members only.

Color America. Radio Shack color Computer SIG meets 2:30-5 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. Contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

SBT

The Orange County SBT Users Group is being formed and is seeking members who are interested in an atmosphere that promotes the better understanding and more efficient use of the SBT Accounting Software. Contact Jay Rubin, P.O. Box 5145, Newport Beach, CA 92662, (714) 720-8171.

SANYO

Sanyo-MS/DOS Table Top Computers, 14717 South Prairie Ave., Lawndale, CA 90260. (213) 679-1151.

Zenith-Sanyo Users Group meets 10 am every first and third Sunday at 401 S. La Brea Ave., Inglewood, CA 90301. Call Alan Gillen, (213) 674-0318 for information.

Sanyo Users Group of LA (SUGLA). Devoted to users of Sanyo MBC 550/555 micro business computer. Guests welcome. Dues $15/yr. Speakers, presentations, public domain software library, information, new hardware and software reviews. Meetings alternating 2nd Wednesdays and Thursdays, 7 pm, USC School of Medicine, Norris Medical Library, Conference Room Downstairs, 2025 Zonal Ave., LA. Contact Fred Blechman, (818) 346-7024.

TEXAS INSTRUMENTS

LA 99er Computer Club TI 99/4A support, classes and SIGs, large software library, monthly newsletter. Demonstrations, bulk purchase discounts on hardware, software and books. A good group to join. Meetings at Torrance Public Library, 3031 Torrance Blvd., Torrance, CA. 4th Wednesday of the month, 7 pm. Contact Terrie Masters, 148 S. Maple Drive, Beverly Hills, CA 90212, (213) 271-6930.

The TI-99 Club. Yes, there still are a lot of 99's and 99/4a's around. If you own one, then get in touch with these people. They have good info for TI owners. Meetings take place at the Westminster Community Center on the third Thursday of every month at 7:00 pm. For info, call (714) 842-0859.

TI-West (Los Angeles West Side Area). Meets at DeCoursey Engineering Laboratory, 11828 W. Jefferson Blvd., Culver City, on the 3rd Monday of each month. For information, contact Lew Howard at (213)397-9668.

San Gabriel Valley TI 99/4 Users Group meets 1st Wed./mo. at 6:30 pm in the Covina Parkway, West Covina, CA. Contact Tom Padilla, (213) 330-8240.

TI Riverside UG. Supporting the TI 99/4A. Meetings at Collett School, 3rd Thursday, 7 p.m. Contact Ed Butcher, 3523 McKinley St., Riverside, (714) 686-0336.

San Fernando Valley TI 99/4A User Group. Library, Workshops, Newsletter, How To? For further information call Ken Gilliland, (818) 507-6219, 6-9 pm, or Jim Berry, (805) 255-7583, 4-9 pm. Meetings 2nd Wednesday of the month, 7:30 pm, Doctor's Conference Room, Sherman Oaks Community Hospital, 4929 Van Nuys Blvd.

Antelope Valley TI UG. TI User Group. Meetings at Palmdale Culture Center, 3rd Wed., 7 pm. Contact Len Rouw, 38540 26th St. East, (805) 947-6270.

El Toro 99 Home Computer Users Group. The ET-99 Home Computer User Group meets to demonstrate programs, equipment, and discuss techniques. Contact Ken Baldwin, 23065 Sonoita, Mission Viejo, CA 92641, (714) 855-0480. Meetings at Mercury Savings and Loan, 1-5 and Lake Forest, El Toro, 2nd Saturday of each month 9 am - 12 noon.

Tri-Valley 99'ers. We have what you're looking for! Interesting guest speakers, software/hardware demonstrations, large group library, monthly newsletters. We serve the entire Conejo Valley and beyond! Contact Steve Mehr (805) 496-8725 or Chuck Salvatore, (805) 527-4129 for more information.

BUG (Brea 99er's Users Group). Meets the first Monday of the month at 7:30 pm at the Western Federal Savings meeting room, #10 La Habra Fashion Square, corner Beach and Imperial, in La Habra. For further information call Bob August at (714) 871-3405.

TIMEX-SINCLAIR

Timex-Sinclair. South Bay and West Side groups. Call John W. Petersen at (213) 545-9581 anytime or Dr. George Kuby (213) 201-2014 after 3 pm for more information.

TOMY

Tomy Tutor computer user group. Contact Eugene C. Dinovo, P.O. Box 37, Sepulveda, CA 91343.

VICTOR

West Los Angeles Victor Users Group (WLA-VUG). Victor 9000 users - you are not alone! Meet other users. Free V9000 software & purchasing discounts for members. Victor-specific bulletin board (818) 989-2216. Meetings at 8651 Olin St., LA 90034, 7 pm, 3rd Thursday, every month except December. Contact Roger Goodman, (213) 558-8363.

Orange County Victor 9000 User Group. Meets second Friday of the month at 7:30 pm, Cal State Long Beach, Palo Verde St., Engineering Bldg. #2, Room 304, Long Beach. For information write or call Don Henderson, 9350 Bolsa Ave. #8, Westminster, CA 92683, (714) 894-0073.

WANG

Wang WP Users Group. Meets 4th Thurs. of each odd month, 6 pm. Newsletter, speakers,information network. Call for meeting place: Steven Hirsh, (213) 255-5515, or write 2858 El Roble Drive., Los Angeles 90041.

WORDSTAR

WordStar User Group LA. Now forming. for all WordStar users, regardless of computer. Discussion, lectures, presentations, & demos, including enhancement products. Shortcuts & discount purchases. All experience levels. Call for info about first meeting: Ken Adler, (818) 501-4798, (818) 783-4533.

XSCRIBE

X.C.E.L. (XScribe Court Reporters for Education and Learning). XScribe users can share knowledge, have sessions on resolving problems encountered, and keep abreast of activities in the C.A.T. field. Contact Diane Altshuler, XScribe Corp., 3366 N. Torrey Pines Ct. Suite 300, La Jolla, CA 92037. (800) 854-2919.

ZENITH

Zenith-Sanyo Users Group meets 10 am every first and third Sunday at 401 S. La Brea Ave., Inglewood, CA 90301. Call Alan Gillen, (213) 674-0318 for information.

No user group in your area? Start your own with a MicroTimes user group listing.

MicroTimes
5951 Canning St.
Oakland, CA 94609

Got a computer to sell? Services to offer? Advertise in the MicroTimes classifieds.

MicroTimes Classifieds
5951 Canning St.
Oakland, CA

WE SELL, DELIVER AND INSTALL*

HISTORY IN THE MAKING!

The Most Advanced
PC in the WORLD.
. . . and WE Stock It!

COMPAQ DESKPRO 386

Superior Features:

- Processor: 32-bit 80386; 16MHz
- 1 meg RAM (expandable to 14 MB)
- One 1.2 MB Floppy Drive
- One 40, 70, or 130 MB Hard Disk
- Compaq EGA Card
- Compaq EGA Monitor

and much more . . .

SYSTEMS

IBM XT 286 640K 20MB	325u
IBM XT 20MB/30MB	1945/2075
IBM AT 20MB/30MB	2790/3025
IBM AT MODEL 339	3995
AT COMPATIBLE	FROM 1450
XT COMPATIBLE	FROM 695
AT&T 640K 20MB/30MB	1995/2150
AT&T 640K 20MB W/TAXAN 640	2400
AT&T 640K 20MB W/AT&T COLOR	2750
LEADING EDGE 512K 2 DR SYS	CALL
LEADING EDGE 640K W/30MB	CALL
LEADING EDGE COLOR SYSTEM	CALL
COMPAQ 386 W/40MB	CALL
COMPAQ PORT MODEL II	2590
COMPAQ PORT II W/20MB	3200
COMPAQ DESKPRO 286 MODEL I	2696
COMPAQ PORTABLE 286 MODEL I	2895
COMPAQ PORT 2 DR 256K	1599
TOSHIBA LAPTOP T1100 + /3100	1895/3600
IBM CONVERTIBLE	1495
SPERRY IT w/44MB HD	2925
MULTI TECH 900 512K, 6-10 MHz 20MB SYS	2190

PRINTERS

EPSON FX-85	389
EPSON FX-286	499
EPSON EX-800/EX1000	499/699
EPSON LQ-1000	700
EPSON LQ-800	555
EPSON LQ-2500	1050
OKIDATA 182	235
OKIDATA 192 PLUS	350
OKIDATA 193 PLUS	525
OKIDATA 292	525
OKIDATA 293	655
CITIZEN MSP 25	485
CITIZEN MSP 20	345
CITIZEN MSP 15	375
TOSHIBA P351 PAR./SER.	970
TOSHIBA P321 PAR./SER.	470
HP LASERJET/LASERJET PLUS	2195/2990
C ITOH 310/315	470/575

MONITORS/PERIPHERALS

TAXAN 760 EGA	499
AMDEK 310A	155
AMDEK 722 COLOR	545
AST ADVANTAGE	355
AST 6 PACK PREMIUM	399
HAYES 1200B	385
HAYES 1200	425
HAYES 2400	635
TAXAN 640 COLOR	475
MOUNTAIN 20MB HARDCARD	675
MOUNTAIN 30MB HARDCARD	925
TANDON 20MB HARDCARD	495
NEC MULTISYNC	579
NEC PRINTERS	CALL
QUAD EGA +	399
PARADISE AUTO SWITCH EGA	399
IBM EGA	425
MULTITECH COLOR MONITOR	299
SOFTWARE SPECIALS	CALL

SEAGATE HARD DISK SALE

20MB	355
30MB	455
40MB	795
60MB	CALL
80MB	1400

THIS MONTH'S SPECIAL

LEADING EDGE
MODEL D

$1999

640K, 360K Drive, 30MB, Hard Disk, Parallel/Serial Port, Color/Mono Graphics Card, Amber Monitor, Cables, Citizen 120 Printer, 1200B Modem, Wordprocessing and Spreadsheet Softwares with DOS 3.1/GW Basic.

We also carry these products:
Hercules, Houston Instruments, HP Laser Printers, Canon Laser Printers, Sony Monitors, Hayes Modems, Leading Edge Modems, AST Research, Sigma and others.

* Deliveries May Be Subject to Additional Charge.
* Prices subject to change without notice.

COMPUCAL, Inc.

13400 S. Prairie Avenue
Hawthorne, CA 90250

(213) 675-0115

CLASSIFIEDS

PERSONAL

UNLIMITED LONG DISTANCE. $120.00 monthly flat rate. New concept in telephone service for individuals & small business. Distributors URGENTLY needed. Tremendous opportunity. For details send stamped business envelope to: IDEAL TEL, 1147 W. Broadway #84, Glendale, CA 91205.

EMPLOYMENT OFFERED

CAD OPERATORS
Traffic and transportation engineering consulting firm in downtown Los Angeles seeks contract CAD operator for 4 month assignment. AUTOCAD exp. necessary. Up to $20/hr. depending on experience. Send resume to: T. Petersen, DKS Associates, 411 Fifth St., 5th Floor, Los Angeles, CA 90013.

EQUIPMENT

Free brochure of software/computer engineer caps and T-shirts. Send SASE to: Station Products, PO Box 90898, Los Angeles, CA 90009.

MicroTimes classifieds reach several hundred thousand California readers each month. Advertise your goods or services
MicroTimes Classifieds
5951 Canning St.
Oakland, CA 94609

HARDWARE FOR SALE

T1994A system complete. Incl. software. 400 dollars. Call Don (213) 778-4625.

Leading Edge D with 50 MB drive! Complete. $1,995. AT Clone complete with 30 MB hard drive. $1,895 (714) 547-0400, (415) 345-6800.

Apple IIe computer: 2 drives, 128k, modem, printer, monitor. $1,195. (714) 547-0400, (415) 345-6800.

IBM-XT compatible with 50 MB Hard Drive, 640K, 2 floppies, ports. Complete. $1,495. (714) 547-0400, (415) 345-6800.

Name brand merchandise and compatibles. Vast selection, holiday prices! Top-of-The-Line Computers, (818) 886-1269.

Apple II+sys. 64K, disk drive, monitor, printer, CP/M card, WP & more software. Call Mike after 6PM. (818) 289-9107. $550.

Kaypro 2000 with 300/1200 Hayes-Comp modem, 768K, all original software & manuals, carrying case, other goodies. $1,400. (213) 326-8770.

XT compatible digitizers. Runs auto cad. Has large 30 x 40 inch surface. (714) 547-7049.

PC Jr Accessories: second drive memory expansion keyboards. PC-XT clones, modem, hard disk, games. (415) 431-8399.

Commodore color monitor: $130 or less. New. (213) 564-7703. Call after 8 PM.

SERVICES

COMPUTER CONTRACTORS
STAY INDEPENDENT
Avoid Agency Fees
Avoid W-2's
The Tech-Support Directory
is designed to market your services to potential clients. The most inexpensive advertising you can get!
(213) 626-8750

OPERATE YOUR OWN ONLINE SERVICE
• Specialty Programming • Service Rental/Maintenance •
• Multi-user Systems • Professional Service •
• Dial-up Networks • Small Business Applications •
• Corporate Services • Database Services •
• Design Consulting •
American TeleWeb
(213) 372-9364
1233 Hermosa Avenue, Suite 205, Hermosa Beach CA 90254

Custom programs. Specializing in order entry, inventory, GIL, AIR, AIP, sales. 20 yrs experience. Bernat Computer Service. (213) 586-3131.

New PC user? Personal instruction, application programming by experienced professional. Reasonable. Free consultation. Davies. (818) 363-7181.

Earn $50/hr assembling PC clones. Free information, send SASE to: PCIFB, 14102 Woodlawn, Tustin, CA 92680.

IBM-PC training, dbase 3,Wordperfect, Pascal, etc. 18 yrs exp, hands-on, all levels. Call for free consultation. Stewart (818) 242-7350.

Troubleshoot the IBM PC. 4-day seminars for technicians and service managers. Call for FREE brochure. Movonics Company (415) 960-1250.

SERVICES

RENT
Public Domain & User Supported
Software
for •IBM •SANYO 55X •C64
Coming Soon:
•APPLE II •MACINTOSH
$1 a Disk
for 10 Day Rental
Send an #10 SASE & specify computer type for listing to:
FutureSystems
Box 3040 (R), Vista, CA 92083
24 hr Info/order (619) 941-3244
Office: Monday - Saturday
10AM-6PM PST (619) 941-9761

SOFTWARE FOR SALE

Framework II. Brand new and dBASE III. $175 each. Mike (714) 645-1780.

Plotsmith(TM). Serious plotting capability for scientific or business data analysis. IBM-compatible and very friendly. Send $59 to Fulton Findings(TM), 1251 W. Sepulveda #800, Torrance, CA 90502.

Free catalog for IBM compatible software. Send name and address: MicroLease, PO Box 92062, Long Beach,CA 90809-2062. Call (213) 408-2630.

Great Shareware, cheap and fast! Only $5.95 per disk for absolutely smashing Shareware programs. PC-Write, PC-Outline, over 100 more. Free catalog. Shareware Express, 31877 Del Obispo, Suite 102A, SJ Capistrano, CA 92675.

Over 200 programs! Game, financial, word processors and more. Send $30.00 to: Valley Systems Software, 14088 Fenton Lane, Sylmar, CA. 91342. 30 day money back guarantee.

IBM software rentals. All of the newest releases at 80-90% off retail cost. Call (213) 281-6947.

CLASSES NOW FORMING
Lotus 1-2-3
dBASE III
Multimate
Call for schedule, rates, and other available computer classes
California Computer Mat
(714) 773-4303

WANTED

Software program for organizing grocery coupon file list. For Tandy (sx) (IBM compatible). (714) 838-4720.

Wanted: California vital statistics birth database, microfiche indexes. Trade. Wegner, Box 262, Glendale, Calif. 91209.

WILL TRADE

IBM PD-software. Send list: Hung Ho, 1027 W. 34th St. # 207A, Los Angeles, CA 90007.

PC/MS DOS software. 400+ disks. Send list to: Al, PO Box 493, Cardiff, CA 92007.

MicroTimes classifieds reach several hundred thousand California readers each month. Advertise your goods or services.
MicroTimes Classifieds
5951 Canning St.
Oakland, CA 94609

MicroTimes Classifieds WORK!
Call (415) 652-3810 or (213) 467-7878

EAGLE Technical Support
714-895-1759
If you own an Eagle system, you should call us for information !
Free Telephone Support
Parts & Service Available

LA'S NEWEST INDOOR COMPUTER SUPERMART!
SAVE! SAVE! SAVE! SAVE! SAVE! SAVE!
COMPUTER TRADING POST
FOR ALL YOUR PERSONAL COMPUTING NEEDS
■ NEW AND USED ■ LOW PRICES ■ VARIETY
■ HARDWARE ■ SOFTWARE ■ BOOKS
■ OVER 100 VENDORS! ■ SEMINARS!
GLENDALE CIVIC AUDITORIUM
1401 NORTH VERDUGO ROAD
(Hwy 134 to Glendale Ave. Exit go 1 mile north)
SEMINARS, WORKSHOPS, PRODUCTS, SERVICES
FOR VENDOR INFO. CALL (818) 352 9829
Jan. 31st Saturday
Time: 9AM - 5PM
Admission: $3.00

NEED SUPPORT?? CALL US!
Consulting • Training • Customizing
DataBases • Spreadsheets • WordProcessing
STRUCTURED SYSTEMS CONCEPTS
(818) 358-3271

To Place A Classified Ad

Free Ads: Private individuals may have *one* free classified ad of 15 words or less; additional words are 50¢ per word. A phone number, including area code, counts as one word. If you want your ad to run more than once, all subsequent printings will be charged at one half business rates.

Business Ads: Rates are $15 for 15 words or less. 50¢ for each additional word. Again, your phone number counts as one word.

Display Classifieds: Classified ads requiring special treatment (hairlines, all caps, boldface, centering, etc.,) are considered display classified ads: Call Chuck Stanley at (415) 652-3810 or Reece Franklin at (213) 467-7878 for further information.

DEADLINE for classified ads is the 20th of the month *preceding* the issue date (i.e. deadline for the July issue is June 20). Type your ad or print it legibly, using this coupon or a separate piece of paper. BE SURE TO INCLUDE YOUR ADDRESS AND PHONE NUMBER SO WE CAN CONTACT YOU IF NECESSARY. Specify the category you want your ad to run under, and send it with your payment (check, money order or VISA/MC) to MicroTimes Classifieds, 5951 Canning St., Oakland, CA 94609.

For a mere fraction of your paycheck — buy, sell, trade, whatever. Just $15 for the first 15 words plus 50 cents for each additional word, per issue

Category

☐ Employment Offered ☐ Employment Wanted ☐ Equipment
☐ Hardware For Sale ☐ Office Space ☐ Personal ☐ Services
☐ Software For Sale ☐ Video ☐ Wanted ☐ Will Trade

Cost of ad _____ X number of issues to run _____ = Amount Enclosed _____

Send check ☐ Money Order ☐
Visa ☐ or MasterCard ☐ Exp Date _____
Account # _____
Signature _____

Advertisers Name _____
Street Address _____
City _____ State _____ Zip _____
Phone (_____) _____

Send To: MICROTIMES Classifieds
1800 N. Highland Ave. #220, Hollywood California 90028 OR 5951 Canning Street, Oakland California 94609

U.S. STANDARDS AT TAIWAN PRICES

FACTORY PRICES TO DISTRIBUTORS AND DEALERS

SUPER TURBO V20—8 MHZ

- 256K RAM
- 4.77/8 MHZ
- IBM PC compatible
- 360K 5.25" Disk Drive
- "AT" style Keyboard

ONLY **$399.00**

Monochrome Monitor Optional

AT

(pictured below)

- "AT" Motherboard w/ 512K RAM
- 10/6 MHZ
- Disk Drive
- Floppy Controller Card
- Keyboard

ONLY **$899.00**

Monochrome Monitor Optional

MOTHERBOARDS

(w/o bios & memory)

XT Regular 4.77MHZ 640K	$ 79.00
XT Turbo 4.77/8MHZ	89.00
XT Turbo 8MHZ, 4 layers	115.00
XT Turbo 10MHZ	115.00
AT 6/8MHZ	390.00
AT Turbo 10MHZ	420.00
Baby AT (will fit XT case)	390.00

EXPANSION CARDS

XT Disk Controller 1 port	$ 25.00
XT Disk Controller 2 ports	27.00
AT Floppy Disk Controller	60.00
AT I/O Card	65.00
RS 232 1 port	24.00
RS 232 2 ports	29.00
Parallel Card	14.00
I/O Plus	60.00
Multi I/O	65.00
384K or 768K MTF "O"K	74.00
640K RAM "O"K	38.00
AT 2MB MTF	127.00
Clock Card	25.00
Game Card	15.00

MONITORS

Samsung TTL	$ 68.00
Beltron TTL w/tilt & swivel	85.00
Beltron RGB, green/amber	240.00
TVM RGB, green/amber	275.00
EGA Mitsubishi	395.00

MODEMS

Encore 1200HB Internal	$ 99.00
Encore 2400HB Internal	269.00
Encore 1200HB External	110.00
Encore 2400HB External	299.00

KEYBOARDS

K7S (5150)	$ 40.00
BTC 5151	55.00
5060 XT/AT	50.00
5160 XT/AT	50.00
K-8 XT/AT	50.00
K-9 XT/AT	55.00
XT/AT/RT	70.00
5152 XT/AT	65.00

INTERFACE CARDS

Monochrome Adaptor	$ 41.00
Monographic Printer	60.00
CT 6040	65.00
Color Graphic Display	44.00
Color Graphic Printer	55.00
EGA Card	185.00

CHIPS

8087—2	$ 152.00
8087—3	110.00
V—20	14.00
80287	274.00
E Prom 2764	3.20
E Prom 27128	3.95
256K RAM Chips	2.55
64K RAM Chips	1.00

CASES

(w/hardware & speaker)

XT Flip-top or Slide	$ 27.00
Mini AT (size of XT)	38.00
AT	68.00

POWER SUPPLIES

150W for XT	$ 49.00
200W for AT	85.00
185W for AT (XT size)	75.00

CABLES

Printer Cable, 6 ft.	$ 7.00
RS232 Serial Cable	5.00
AT Hard/Floppy Controller	20.00
Floppy Controller	5.00
Multi I/O Cable	7.00
Modem Cable	5.00
I/O Plus Cable	7.00
384K Cable	6.00

HARD DRIVES & CONTROLLERS

20MB Seagate (68MS)	$275.00
30MB Seagate (40MS)	550.00
ST238 20MB Seagate w/Adaptec Cont.	450.00
Western Digital Controller D7C	90.00
AT Floppy & Hard Disk Cont.	190.00
20MB Hard Card	391.00

FLOPPY DISK DRIVES

TEAC 360	$ 85.00
TEAC 1.2MB	110.00
Fujitsu	75.00
Chinon 1.2MB	102.00

OTHERS

Back-up Tape 20MB	$370.00
Logi Mouse	77.00
Joystick	15.00
Keyboard Drawer	30.00
Disk Storage	8.00
Power Pad w/Surge Protector	20.00
Power Strip w/Surge Protector	5.00
Printer Switch Box	20.00
Printer Stand	8.00
Computer Stand	20.00
E Prom Burner	160.00
Speaker	1.00
Bulk Diskettes	0.39
Printers	CALL

NOTE: Above prices are for quantities of 50. They do not include freight, handling and C.O.D. charges. We charge $3.00 handling per box. Prices are subject to change.

All products are IBM compatible. IBM, IBM PC and AT are registered trademarks of International Business Machines Corporation

TAIWAN COMPUTER TRADE CENTER

7220 N.W. 58th. Street
Miami, FL 33166
(305) 477-2600
(305) 477-7007

2707 Stemmons Freeway,
Suite 200
Dallas, TX 75207
(214) 637-6641
(214) 637-6657

2215 N. Broadway
Los Angeles, CA 90031
(213) 222-9680
(213) 224-8610
(800) 342-2332

UCR
1690-D Cobb Parkway S.E.
Marietta, GA 30062
(404) 988-0900

Temporary Backup Files

By Wayne A. Yacco

This month's entry is an answer to the detritus created by all those application programs that insist on creating a backup version of the files they modify. Not that those files aren't sometimes useful, but most of the time they just take up space.

The ideal might be to create the backup temporarily and then delete it upon verifying successful completion of the task at hand. Some users would probably prefer this option to simply being able to switch off the creation of backup files altogether. For those files with an extension of **BAK, DELBAK** could be the answer.

JOB FUNCTIONS

The job begins by displaying the files to be deleted. This allows the user to detect any files which should be retained. When using this batch job, it is convenient to adopt the convention of renaming those files which should be preserved from the **BAK** extension to another such as **SAV.**

If the directory contains no files with the **BAK** extension, then control transfers to the end of the file and processing ends. All job references to **BAK** should be changed to the appropriate extension for programs which use a different naming convention for their backup files.

A message is displayed advising the user of the response required to delete the files and a **PAUSE** is executed. Normally, a pause causes the command processor to wait for one of two responses and then takes action accordingly. If the response is a **CTRL BREAK**, then processing ends. Any other response elicits a continuation of processing. This job modifies this sequence of events to create an improved user interface.

When the **PAUSE** is executed, rather than wait for keyboard response, **DELBAK** takes advantage of the way DOS reacts to a **CTRL BREAK** and issues one immediately. This causes DOS to issue a termination inquiry that can be answered with a "**y**" or "**n.**" The query is not case sensitive, and any other response is ignored.

Wayne Yacco is an independent data-processing consultant with a practice in the San Fernando Valley. Since 1980, he has assisted clients in the implementation of microcomputer-based systems. Questions may be sent to him at P.O. Box 4239, Burbank, CA.

DELBAK.BAT

There are two main advantages to this method. First, an accidental keystroke is less likely to cause undesired processing to continue. Second, the user does not require special knowledge of the **CTRL BREAK** required by **PAUSE** to effect a termination. There is also a third advantage. Due to DOS's redundancy, the user would still have to enter the "**y**" or "**n**" after using the obscure **CTRL BREAK**, so an awkward compound keystroke is saved.

Issuing a **CTRL BREAK** from within the batch job itself requires redirection of input to the **PAUSE** command. The redirected file, **BRK,** is not printed in this text because it contains only one break character and that character is unprintable. Cauzin users can read this file from the softstrip, but other users will have to create it using **EDLIN** or their word processor.

In **EDLIN**, enter the insert mode; enter **CTRL V C**. The "**C**" must be uppercase. Although **EDLIN** offers the easiest way to create this file, some users harbor an unreasonable dislike for it. Those users will insist on using a word processor. Microsoft *Word* users can create this file in the unformatted mode using the ALT key to enter ASCII character 3 from the numeric pad. *WordStar* allows this character to be entered as **CTRL P C** (**^P C**) with the resulting character appearing as **^C**. Use the non-document mode for *WordStar*.

The actual delete is performed with a mask which allows a dummy parameter to be used to exclude all but a limited number of files. This mask may cause side effects, since it includes an asterisk. However, the same mask is used in the earlier directory listing, which reduces the likelihood that files will accidentally be destroyed. If the intent is to delete only selected files, then the asterisk should probably be removed. On the other hand, if the intent usually is to delete all **BAK** files, then the dummy parameter merely adds a certain amount of control. Make any changes to both the **DEL** and **DIR** commands.

IMPLEMENTATION NOTES

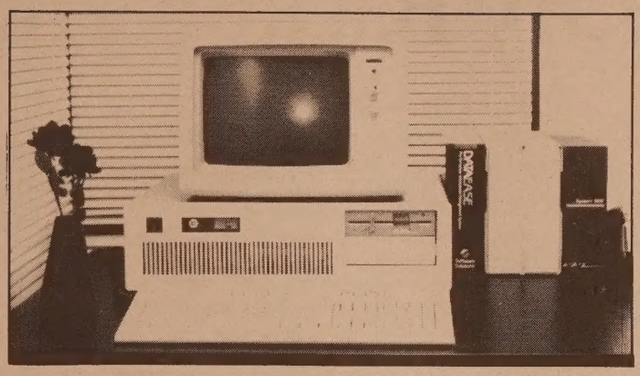
The **BRK** file must reside on the active path or in the same directory with delbak. Otherwise, the path must be specified in **DELBAK**. The example assumes that **BRK** resides in a directory named / **BAT**.

```
echo off
goto :enddoc   D E L B A K

rem
rem     ************************
rem     ************************
rem     **                    **
rem     ** © Copyright Wayne A. Yacco 1986. **
rem     **                    **
rem     ************************
rem     ************************
rem
rem  ********************************
rem   This job deletes any backup files (.bak)
rem   in the current directory. A control break
rem   (^C) entered at the pause terminates the
rem   job without deletion. A directory, other
rem   than current, and/or file, other than *,
rem   may be specified in a parameter (%1).
rem   The backslash (/) must be included even
rem   if a filename is omitted. E.g.:
rem
rem   = = = = =}}     delbak path / filename
rem
rem   Note that the file extension must not be
rem   specified. If a filename is specified, an
rem   asterisk will be appended to it. All
rem   filenames with the .BAK extension and
rem   the same set of leading characters as
rem   the specification will be selected.
rem  ********************************
rem

:enddoc


   dir %1*.bak
   if not exist %1*.bak goto :end__of__file
   echo.
   echo      Enter N to delete file(s).
   echo.


rem
rem  ********************************
rem  ** The next statement must specify **
rem  ** the path to the BRK file.      **
rem  ********************************
rem


   pause < c: / bat / BRK
   del %1*.bak

:end__of__file
```

Copyright © 1986 by Wayne A. Yacco. All rights reserved.

TURNING IBM COMPATIBLE DISCRIMINATORS INTO ENTHUSIASTS.

PC-TECH S-286-AT is a high quality business computer system designed for rigorous daily use. It's manufactured with top quality components in Japan.
S-286 goes thru 48 hrs. burn-in after it has been tested for visual inspection, in-circuit, B-1 test 1,2 functional test and acceptance test.



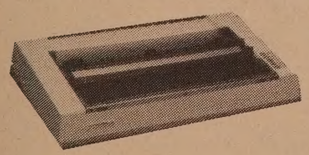
PC-TECH S-286 AT IS AN OPEN MINDED COMPUTER, READY TO ACCEPT NEW TECHNOLOGY. 100% IBM AT COMPATIBLE. RUNS PC-DOS, MS-DOS, UNIX, S-286 AT WITH FUTURE BUILT IN. UPGRADABLE TO 80386.

	CPU SPEED	MEMORY ON MOTHER BOARD	OPERATING SYSTEM	NEW ENHANCED KEYBOARD	WARRANTY	PRICE
PC-TECH S-286	6 OR 8 MHZ 10 OPTION	512K UPTO 1024K	DOS 3.1	YES	12 MONTHS NATIONWIDE	1495***
IBM AT	8 MHZ ONLY	512K UPTO 640K	OPTION	YES	12 MONTHS NATIONWIDE?	5295**
COMPAQ 286	6 OR 8 MHZ	256K UPTO 2.2 MB	OPTION	NO	12 MONTHS NATIONWIDE?	3395
SPERRY PC-IT	6, 7.16 MHZ	512K UPTO 1024K	DOS 3.1	NO	90 DAYS?	3395
TANDY 3000	6 OR 8 MHZ	512K UPTO 1024K	OPTION	NO	90 DAYS?	2595
TELEVIDEO	6 OR 8 MHZ	512K UPTO 1024K	OPTION	NO	90 DAYS?	2995*

?IF BOUGHT FROM AUTHORIZED DEALERS
*INCLUDES 20 MB HARD DISK
**INCLUDES 30 MB HARD DISK
***CAN BE CONFIGURED TO ANY SPECIFIC NEED

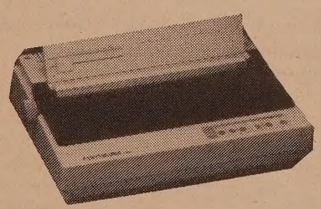
FORTIS Dynax, Inc. **PRINTERS**

DOT MATRIX



200 CPS 50 CPS NLQ
1 Year Warranty
DM2010 ..... $325
DM2015
Wide Carriage $425

DAISY WHEEL

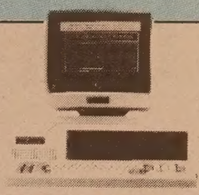


25 CPS
Dual Interface
Wide Carriage
16K Internal Memory
2 Color Printing
DX21 ..... $349

AUTOCAD™

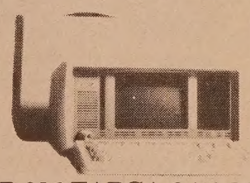
AUTHORIZED DEALER

COME TEST IT TODAY!!
PLOTTERS, DIGITIZERS, 19" MONITORS AND HIGH RESOLUTION CARDS. COMPLETE CAD WORKSTATIONS ..... CALL



X-TURBO BEST AND FASTEST $595

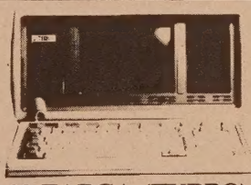
* 4.77/True 8 MHZ, 640K Ram, 135W Power Supply, AT Style Keyboard
* Norton Utility Rates at 3.1 or 200% more advanced than IBM XT
* 100% IBM BIOS ROM Interchangeable for IBM XT Upgrade
Built-In ROS Diagnostic.
With Mono Monitorand Card $795
Made in U.S.A. 3 Year Warranty.



$3195

P-286 TARGA 8/10 MHZ

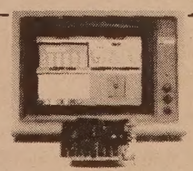
6/8/10 MHZ, 1024K RAM, 1.2 MB Floppy, 20 MB Hard Disk, Serial/Parallel Port, EGA on Motherboard, 9" Non-Glare Screen, DOS 3.2 same size as Compaq 286 II and 33% faster. One Year Warranty (Nationwide)



P-88 TARGA (TURBO)

8088 Intel, 704K RAM, 360K Floppy Serial/Parallel Port, Amber, Green RGB Hi-Res Screen 9". DOS 3.1, Four Slots Open. One Year Warranty (Nationwide) 33% Faster than COMPAQ. Same size as Compaq II.

$1195



$695

EGA-COMB
* 14" EGA Monitor and EGA Card (Major Brand Name)

IT'S TIME YOU KNEW

PC TECH

Penguin Computer Technologies Inc.

(408) 435-9550 • 712 Charcot Avenue • San Jose • CA • 95131

All prices reflect Manufacturers Suggested List Price for Base Model as of August 1986.

WARRANTY WORK DONE BY CONTROL DATA. NATIONWIDE. ON SITE ALSO AVAILABLE.
CONTROL DATA

30 Day Moneyback Guarantee
CALL FOR OUR FREE CATALOG

ECONOMIC ERGONOMICS.

Quimax personal computer monitors. More than just a pretty picture.

Compare Quimax to other leading monitors and you'll notice two important differences. With ours, you get more features for less money.

That's because every Quimax color monitor comes with a tilt and swivel base at no extra charge. Plus a large, 13'' diagonal screen that makes viewing an absolute pleasure.

Then there are the important technical features. Like full IBM® compatibility. And non-interlaced scanning for flicker-free images.

An image for every imaginable task.

Whether you're starting out or ready for CAD/CAM, there's a Quimax color monitor for you.

Our PX-IV, for instance, is a great value. You get professional-looking RGB color. Sharp 720 x 240 resolution. A .31mm dot pitch for high character definition. And a text mode that lets you switch from color to an easy-to-read green display for wordprocessing.

There's also Color Graphics Adapter compatibility for 16-color graphics. But best of all, you won't have to spend a lot of green to get them.

For sophisticated graphics, the Quimax PX-22 high resolution monitor is the smart choice. EGA compatible, it features 64-color graphics. A .31mm dot pitch. Automatic switching for EGA and CGA. An amber/green mode for text applications. And a maximum resolution of 720 x 350.

If ultimate performance is your goal, consider our new PX-32. It puts thousands of colors at your fingertips and displays them all with razor-sharp 720 x 480 resolution.

Install IBM's Professional Graphics Adapter in your computer and the PX-32 supports CAD/CAM and other advanced engineering applications.

Monochrome doesn't have to be dull.

Take our stylish DM-14. Its cabinet is 13% smaller than IBM's standard display. Yet its screen is 30% larger. With characters so clear you can stand back 10 feet and still read every word In amber or green.

And for superb monochrome graphics, there's our new DM-1400. It converts CGA graphics into stunning images of 16-shade amber or green. With up to an incredible 1,000 line resolution.

So before you buy a brand for its corporate image, consider the monitors that can do wonders for yours.

Quimax

Quality and value with a twist.

Quimax Systems, Inc., 844 Del Rey Ave. Sunnyvale, CA 94086 Tel: (408) 773-8282
INSIDE CALIFORNIA: (800) 232-8282.
OUTSIDE CALIFORNIA: (800) 228-0530.

IBM is a registered trademark of International Business Machines Corporation.

TIC Computer, Inc
3164 E La Palma Ave.
Ste. A
Anaheim, CA 92806
(714) 666-0811

Jade Computer Products
Los Angeles
18503 Hawthorne Blvd.
Torrance, CA
(213) 370-7474

Jade Computer Products
San Fernando Valley
21800 Ventura Blvd.
Woodland, Hills, CA
(818) 716-6120

Jade Computer Products
Orange County
3313 S. Bristol Street
Santa Ana, CA
(714) 549-7108

Jade Computer Products
San Diego
4344 Convoy Street
Kearny Mesa, CA
(619) 268-4661

Standard Computer
1254 East Colorado Blvd.
Pasadena, CA 91106
(818) 792-6226